
COMMONWEALTH of PENNSYLVANIA

State Employees' Retirement System

A Component Unit of the Commonwealth of Pennsylvania

COMPREHENSIVE ANNUAL FINANCIAL REPORT

for the year ended December 31, 1998

*Including the Independent Auditors' Report on Financial Statements
for the years ended December 31, 1998 and 1997*

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*Including the Independent Auditors' Report on Financial Statements
for the years ended December 31, 1998 and 1997*

John R. Brosius
Executive Director
Francis J. Dunleavy
Director, Office of Financial Management
State Employees' Retirement System
30 North Third Street
P.O. Box 1147
Harrisburg, Pa. 17108-1147



NICHOLAS J. MAIALE
CHAIRMAN

COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM

30 NORTH THIRD STREET
P.O. BOX 1147
HARRISBURG, PENNSYLVANIA 17108-1147
PHONE HARRISBURG (717) 787-9637



June 1999

Honorable Tom Ridge, Governor
Commonwealth of Pennsylvania

Members, Pennsylvania General Assembly
Members, Pennsylvania State Employees' Retirement System

Dear Governor Ridge, Legislators and Members:

The Board of Trustees of the Pennsylvania State Employees' Retirement System (SERS) is pleased to present our *Comprehensive Annual Financial Report* on the SERS Fund for calendar year 1998.

As chairman of the SERS Board, I am pleased to note that the Fund had a total investment rate of return of 16.3% in 1998 and a total market value of \$24.1 billion as of December 31, 1998. By comparison, the Fund's annualized investment rate of return for the past five years was 14.5%, and the annualized investment rate of return for the past 10 years was 13.3%. These substantial returns have enabled SERS to maintain fully-funded status since 1992. They also validate the Board's adherence to two key principles:

- ♦ prudent management of Fund assets; and
- ♦ ensuring payment of benefits promised by the Commonwealth to SERS retirees and beneficiaries.

Also due in part to these substantial returns, the Commonwealth's total employer rate of contribution to the Fund, which was as high as 18.87% of payroll in 1981, has been reduced to 5.0% of payroll for fiscal year 1999-2000. Rest assured that the SERS Board, staff and I will continue to pursue prudent investment strategies to assure the solvency of the Fund and the quality of pension-related services to all SERS members.

Sincerely,

Nicholas J. Maiale
SERS Board Chairman

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Board of Trustees

Honorable Nicholas J. Maiale
Chairman



Honorable Gibson E. Armstrong
State Senator



Edward J. Keller
Executive Director, AFSCME Council 13



Honorable Robert A. Bittenbender
State Secretary of the Budget



Honorable Edward J. Lacyk
State Representative



Honorable Barbara Hafer
State Treasurer



Honorable Raphael J. Musto (1999)
State Senator



James E. Nevels
Financial Consultant



Honorable M. Joseph Rocks
Retired Member and Former State Senator



Honorable Thomas G. Paese
State Secretary of Administration



Honorable Jere L. Strittmatter
State Representative



Mission Statement

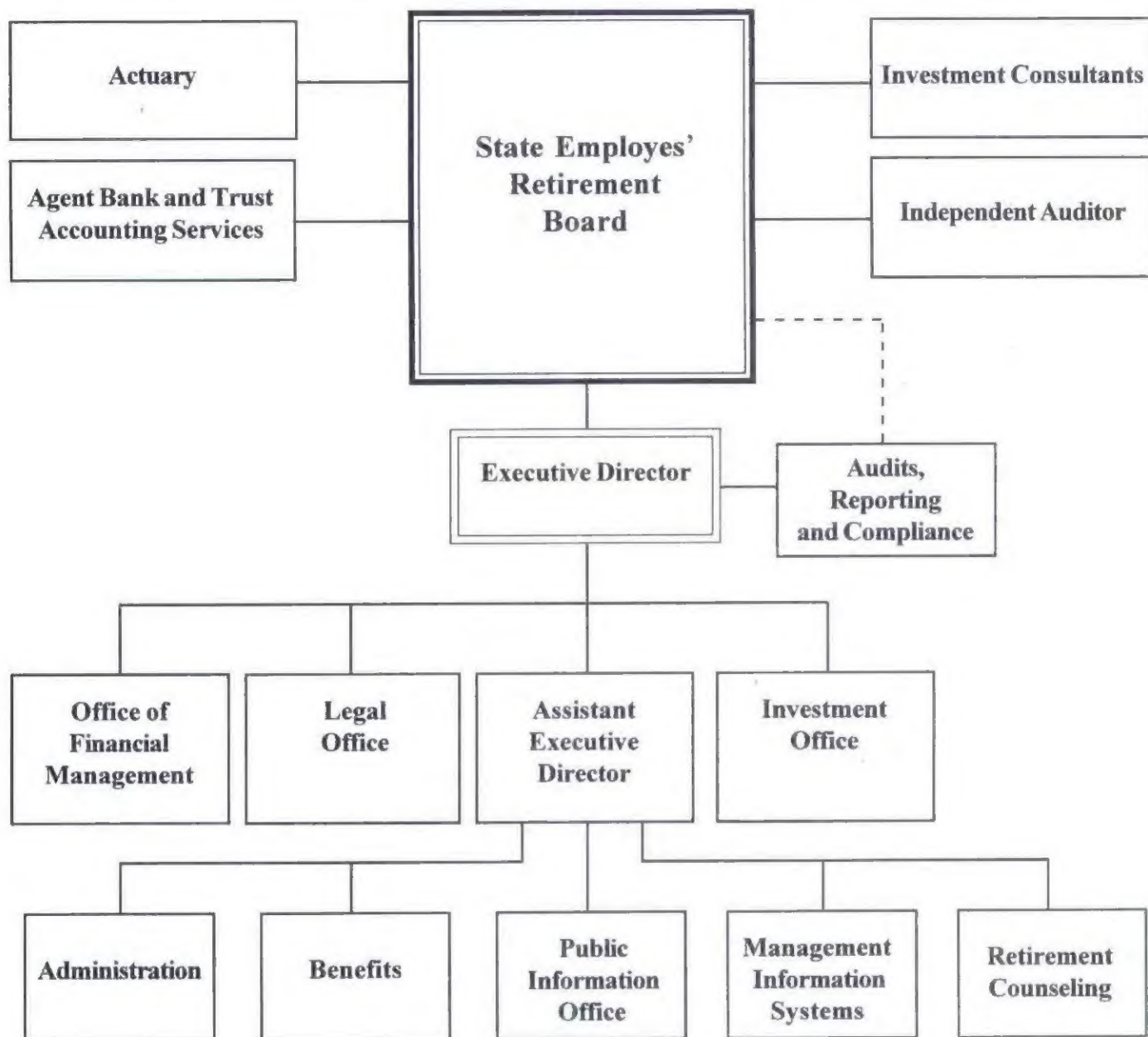
Plan Administration: To administer the retirement benefits plan for state employees and elected officials in accordance with Pennsylvania statutes;

Member Services: To provide effective services to all active and retired members;

Management of Retirement Fund Assets: To accumulate, manage and disburse the retirement Fund assets in accordance with fiduciary standards and at a reasonable cost to Commonwealth taxpayers;

Investment Policy: To maximize investment returns while exercising a prudent person investment policy.

Organizational Chart



Administrative Support

John Brosius
Executive Director

Francis J. Donlevy
Director, Office of Financial Management

Harold E. Dunbar
Chief Counsel

Leonard M. Knepp
Director, Audits, Reporting and Compliance

Geoffrey S. Yuda
Public Information Officer

Peter M. Gilbert
Chief Investment Officer

Stewart A. Dier
David J. Kalman
Karen N. Nicely
Diane Sterthous
John C. Winchester
Investment Office Directors

Investment Consultants

BARRA RogersCasey
General Consultant

The Townsend Group
Real Estate Consultant

Cambridge Associates
Private Equity Consultant

General Service Providers

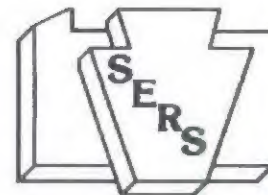
Hay/Huggins Company, Inc.
Actuary

Mellon Bank
*Agent Bank and
Trust Accounting Services*

KPMG LLP
Independent Auditor



COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
30 NORTH THIRD STREET
P.O. BOX 1147
HARRISBURG, PENNSYLVANIA 17108-1147
PHONE HARRISBURG: (717) 787-9657



May 3, 1999

The Board of Trustees
Pennsylvania State Employees' Retirement System
Harrisburg, Pa. 17108-1147

Dear Chairman and Members of the Board:

We are pleased to submit the *Comprehensive Annual Financial Report* (CAFR) of the Pennsylvania State Employees' Retirement System (SERS) for the calendar year ended December 31, 1998. This past year marked SERS's 75th anniversary of service to our members. Over the years, SERS has matured into one of the largest, well-funded public pension plans in the nation. A key tenet of the SERS Mission Statement is to provide effective services to all active and retired members. In order to enhance those services, during the past year the System initiated the design and conversion to optical imaging capabilities. This new process will provide staff with on-line access to member records and improve the delivery and accuracy of member services. The System continues to work at identifying technologies and processes that will strengthen service delivery and improve asset management.

Report Content and Structure

This report is divided into five sections:

- ◆ the Introductory Section, which contains general information regarding the operations of SERS;
- ◆ the Financial Section, which contains the audited financial statements, required supplementary information and other supporting financial schedules;
- ◆ the Investment Section, which contains data regarding the management of the System's investments;
- ◆ the Actuarial Section, which contains certifications and results of the actuarial valuations as of December 31, 1997, the latest available data; and
- ◆ the Statistical Section, which contains general statistical information regarding SERS participants and finances.

Financial Information

The System's management is responsible for the preparation, accuracy and objectivity of the financial information included in this report. SERS has established and maintains an effective system of internal controls designed to provide reasonable assurance that assets are properly safeguarded, transactions are properly executed and that the financial statements conform with generally accepted accounting principles. Additionally, the System's internal Audits, Reporting and Compliance department provides a continuing review of the adequacy and effectiveness of the System's internal control structure. Our independent, external auditors, KPMG LLP, have conducted an audit of the financial statements in accordance with generally accepted auditing standards. Their audit includes tests and procedures designed to provide reasonable assurance the financial statements are fairly presented. The external auditors have full and unrestricted access to the SERS Board of Trustees to discuss their audit and related findings regarding the integrity of financial reporting and the adequacy of the internal control structure.

Income and Contributions

Additions to Plan Net Assets include primarily net investment income from plan assets and employer and member contributions. During 1998, investment income totaled approximately \$3.3 billion, for a total return

of 16.3%. The annual rate of return over the last five years was 14.5%. Member and employer contributions amounted to approximately \$222 million and \$311 million, respectively. The member contribution rate is statutorily determined and is set at 5.0% of the gross salary for most employees. The employer composite contribution rate, actuarially determined and Board approved, was set at 6.7% as reported in the latest actuarial valuation.

Benefits and Expenses

Deductions to Plan Net Assets are primarily benefit payments. During 1998, SERS paid out just over \$1.05 billion in payments to plan members. This increase of approximately \$42 million from the prior year was due largely to the Cost of Living Adjustment passed by the state Legislature and signed into law by the Governor for eligible retired members with a retirement date on or prior to June 30, 1997. Administrative expenses are presented in an annual budget to the state Legislature and are financed from investment earnings. The increase in expenses was incurred primarily to fund investments in management information systems. Total administrative expenses represent slightly less than .08% of total fund assets.

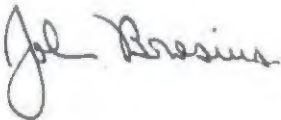
Funding and Investments

Perhaps the most important indicator of a pension plan's financial health is its funded ratio. The funded ratio measures the adequacy of the System's actuarial value of its assets versus the actuarial accrued liability. The assets are determined using a "smoothing technique," which levels the effect of market volatility against the assumed rate of return over a five-year period. Plan liabilities are determined using a variation of the entry age actuarial cost method. SERS is a fully-funded plan, and that fact is reflected in its funded ratio of 107.4% for the year ended December 31, 1997. Funding through future contributions and appropriate investment returns will enable SERS to maintain its fully-funded status. SERS determines appropriate contribution rates through an annual actuarial valuation. A key variable in that study is the assumed rate of return on plan investments. In order to achieve an adequate return, SERS prepares an annual investment plan designed to allocate plan assets among different investment types in order to achieve the highest return with minimal risk. As a result of the System's favorable investment returns, the employer contribution rates have decreased from 18.87% in 1981 to 6.7% in the December 31, 1997, valuation, reflecting the successful reduction of pension costs to employers and Pennsylvania taxpayers.

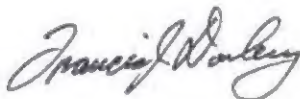
Acknowledgements

This report reflects the dedicated efforts of the SERS staff under the direction of the SERS Board of Trustees. We would like to take this opportunity to express our gratitude to you, the staff, our advisors and others who have worked diligently to administer the plan, enhance the delivery of member services and maximize the returns of the plan's assets in a prudent fashion.

Respectfully submitted,



John R. Brosius
Executive Director



Francis J. Donlevy
Director, Office of Financial Management

FINANCIAL SECTION

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Independent Auditors' Report



225 Market Street
Suite 300
P.O. Box 1190
Harrisburg, PA 17108-1190

Independent Auditors' Report

The Board of Trustees
Commonwealth of Pennsylvania
State Employees' Retirement System:

We have audited the accompanying statements of plan net assets of the Commonwealth of Pennsylvania State Employees' Retirement System (a component unit of the Commonwealth of Pennsylvania) as of December 31, 1998 and 1997, and the related statements of changes in plan net assets for the years then ended. These financial statements are the responsibility of the System's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the plan net assets of the Commonwealth of Pennsylvania State Employees' Retirement System as of December 31, 1998 and 1997, and the changes in plan net assets for the years then ended in conformity with generally accepted accounting principles.

The schedules of funding progress and employer contributions and the year 2000 information on pages 17 through 20 are not a required part of the general purpose financial statements, but are supplementary information required by the Governmental Accounting Standards Board, and we did not audit and do not express an opinion on such information. We have applied to the schedules of funding progress and employer contributions certain limited procedures prescribed by professional standards, which consisted principally of inquiries of management regarding the methods of measurement and presentation of the schedules. We were unable to apply certain of these limited procedures to the year 2000 information because of the nature of the subject matter underlying the disclosure requirements and because sufficiently specific criteria regarding the matters

to be disclosed have not been established. In addition, we do not provide assurance that the Commonwealth of Pennsylvania State Employees' Retirement System is or will become year 2000 compliant, that the Commonwealth of Pennsylvania State Employees' Retirement System's year 2000 remediation efforts will be successful in whole or in part, or that parties with which the Commonwealth of Pennsylvania State Employees' Retirement System does business are or will become year 2000 compliant.

KPMG LLP

April 23, 1999

Financial Statements

COMMONWEALTH OF PENNSYLVANIA STATE EMPLOYEES' RETIREMENT SYSTEM

(a component unit of the Commonwealth of Pennsylvania)

Statements of Plan Net Assets

December 31, 1998 and 1997

(Dollar Amounts in Thousands)

	1998	1997
Assets:		
Receivables:		
Plan members	\$ 2,226	2,099
Employers	13,590	20,175
Investment income	101,915	94,040
Investment proceeds	152,462	105,737
Miscellaneous	251	372
Total receivables	270,444	222,423
Investments:		
Short-term investment fund	729,864	503,781
United States government securities	2,304,420	1,367,178
Corporate and foreign bonds and notes	2,920,704	3,135,339
Common and preferred stocks	8,124,946	7,409,959
Collective trust funds	7,302,435	6,426,362
Real estate	1,990,929	1,717,167
Venture capital and alternative investments	1,104,281	738,893
Total investments	24,477,579	21,298,679
Securities lending collateral pool	802,958	1,439,462
Total assets	25,550,981	22,960,564
Liabilities:		
Accounts payable and accrued expenses	21,028	23,547
Investment purchases payable	603,637	185,784
Obligations under securities lending	802,958	1,439,462
Total liabilities	1,427,623	1,648,793
Net assets held in trust for pension benefits		
(A schedule of funding progress is presented on page 17)	\$ 24,123,358	21,311,771

See accompanying notes to financial statements.

COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
(a component unit of the Commonwealth of Pennsylvania)
Statements of Changes in Plan Net Assets
Years ended December 31, 1998 and 1997
(Dollar Amounts in Thousands)

	<u>1998</u>	<u>1997</u>
Additions:		
Contributions:		
Plan members	\$ 221,618	212,556
Employers	<u>310,501</u>	<u>324,093</u>
Total contributions	<u>532,119</u>	<u>536,649</u>
Investment income:		
Net appreciation in fair value of investments	1,212,355	1,302,080
Collective trust income	1,568,761	1,491,868
Interest	357,708	345,323
Dividends	118,502	115,749
Real estate	153,611	98,897
Miscellaneous	<u>25,954</u>	<u>31,442</u>
	3,436,891	3,385,359
Investment expenses	<u>(82,369)</u>	<u>(72,059)</u>
Net income from investing activities	<u>3,354,522</u>	<u>3,313,300</u>
From securities lending activities:		
Securities lending income	71,736	93,672
Securities lending expenses	<u>(66,414)</u>	<u>(86,803)</u>
Net income from securities lending activities	<u>5,322</u>	<u>6,869</u>
Total net investment income	<u>3,359,844</u>	<u>3,320,169</u>
Total additions	<u>3,891,963</u>	<u>3,856,818</u>
Deductions:		
Benefits	1,050,870	1,008,648
Refunds of contributions	11,285	13,073
Administrative expenses	<u>18,221</u>	<u>15,542</u>
Total deductions	<u>1,080,376</u>	<u>1,037,263</u>
Net increase	2,811,587	2,819,555
Net assets held in trust for pension benefits:		
Balance, beginning of year	<u>21,311,771</u>	<u>18,492,216</u>
Balance, end of year	\$ <u>24,123,358</u>	<u>21,311,771</u>

See accompanying notes to financial statements.

COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
(a component unit of the Commonwealth of Pennsylvania)
Notes to Financial Statements
December 31, 1998 and 1997
(Dollar Amounts in Thousands)

(1) Organization and Description of the System

(a) Organization

The Commonwealth of Pennsylvania State Employees' Retirement System (the System) was established as of June 27, 1923, under the provisions of Public Law 858, No. 331.

The System is the administrator of a cost-sharing multiple-employer defined benefit retirement system established by the Commonwealth of Pennsylvania (Commonwealth) to provide pension benefits for employees of state government and certain independent agencies. The System is a component unit of the Commonwealth of Pennsylvania and is included in the Commonwealth's financial report as a pension trust fund.

The System's financial reporting entity includes several real estate title holding companies, which are presented as blended component units. These legally separate companies, which are created for the purpose of investing System funds in individual real estate holdings, have Boards of Directors comprised entirely of System personnel appointed by the System's Executive Director under authority from the System's Board of Directors.

Membership in the System is mandatory for most state employees. Members and employees of the General Assembly, certain elected or appointed officials in the executive branch, department heads, and certain employees in the field of education are not required, but are given the option, to participate. At December 31, 1998 and 1997, System membership consisted of:

	<u>1998</u>	<u>1997</u>
Retirees and beneficiaries currently receiving benefits	85,834	85,457
Terminated employees entitled to benefits but not yet receiving them	3,785	4,643
Current employees	<u>108,893</u>	<u>108,684</u>
Total members	<u>198,512</u>	<u>198,784</u>
Number of participating agencies	<u>107</u>	<u>107</u>

(Continued)

COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
(a component unit of the Commonwealth of Pennsylvania)
Notes to Financial Statements (continued)
December 31, 1998 and 1997
(Dollar Amounts in Thousands)

(b) Pension Benefits

The System provides retirement, death, and disability benefits. Generally, retirement benefits vest after 10 years of credited service. Cost of living adjustments are provided at the discretion of the General Assembly. On June 19, 1998, Senate Bill 1269 was signed into law, which authorized a cost of living adjustment (COLA) for state retirees, with an effective date of retirement on or prior to June 30, 1997. The adjustment ranged from 1.86% to 25%, depending on the date of retirement and was effective July 1, 1998. There were no cost of living adjustments in 1997. Article II of the Commonwealth of Pennsylvania's Constitution assigns the authority to establish and amend the benefit provisions of the plan to the General Assembly. Employees who retire at age 60 with 3 years of service, or with 35 years of service if under age 60, are entitled to a normal annual retirement benefit. Members of the General Assembly and certain employees classified in hazardous duty positions can retire with full benefits at age 50, with at least 3 years of service.

On April 29, 1994, Act 29 was signed into law, which permitted certain participants with at least 30 years of credited service to retire without a reduction in benefits until June 30, 1997 (retroactive to July 1, 1993). This early retirement window did not require a minimum age in conjunction with length of service for a member to be eligible for full benefits.

On April 2, 1998, Act 41 was signed into law which again permitted certain participants with at least 30 years of credited service to retire without a reduction in benefits from July 1, 1998, to June 30, 1999.

The general annual benefit is 2% of the member's highest three year average salary times years of service. Members of the General Assembly who were members of the System before March 1, 1974, are entitled to a benefit of 7.5% of final average salary for each year of service. State Police are entitled to a benefit equal to a percentage of their highest annual salary, excluding their year of retirement. The benefit is 75% of salary for 25 or more years of service and 50% of salary for 20-24 years of service. Judges are entitled to a benefit of 4% of final average salary for each of the first 10 years of service and 3% for subsequent years. District Justices are entitled to a benefit of 3% of final average salary for each year of service.

According to the Retirement Code, all obligations of the System will be assumed by the Commonwealth should the System terminate.

(Continued)

COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
(a component unit of the Commonwealth of Pennsylvania)
Notes to Financial Statements (continued)
December 31, 1998 and 1997
(Dollar Amounts in Thousands)

(c) Contributions

The System's funding policy, as set by the System's Board, provides for periodic active member contributions at statutory rates. The System's funding policy also provides for periodic employer contributions at actuarially determined rates, expressed as a percentage of annual covered payroll, such that they, along with employee contributions and an actuarially determined rate of investment return, are adequate to accumulate assets to pay benefits when due. Employer contribution rates are determined using a variation of the entry age normal actuarial funding method. A variation of the entry age normal actuarial cost method is used to determine the liabilities and costs related to all of the System's benefits including superannuation, withdrawal, death, and disability benefits. The significant difference between the method used for the System and the typical entry age normal actuarial cost method is that the normal cost is based on the benefits and contributions for new employees rather than for all current employees from their date of entry. This variation should produce approximately the same results as the typical method over the long run. These rates are computed based upon actuarial valuations on the System's fiscal year end of December 31 and applied to the Commonwealth based on its fiscal year end June 30, therefore, the employer contribution rates in effect for the System's year end of December 31 reflect a blended average of calculated rates. The blended contribution rates were as follows:

	1998		1997	
Employer normal cost	8.94	%	8.69	%
Amortization of unfunded actuarial asset	(3.91)		(2.70)	
Amortization of supplemental annuities	1.95		1.50	
Total employer cost	6.98	%	7.49	%

Generally, employees are required to contribute to the System at a rate of 5% of their gross pay. Judges and district justices have the option of electing special membership classes requiring a contribution of 10.0% and 7.5%, respectively. The contributions are recorded in an individually identified account that also is credited with interest, calculated at 4% per annum, as mandated by statute. Accumulated employee contributions and credited interest vest immediately and are returned to the employee upon termination of service if the employee is not eligible for other benefits.

(Continued)

COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYES' RETIREMENT SYSTEM
(a component unit of the Commonwealth of Pennsylvania)
Notes to Financial Statements (continued)
December 31, 1998 and 1997
(Dollar Amounts in Thousands)

(2) Summary of Significant Accounting Policies

(a) Basis of Accounting

The financial statements of the System are prepared on the accrual basis of accounting under which expenses are recorded when the liability is incurred, revenues are recorded in the accounting period in which they are earned and become measurable, and investment purchases and sales are recorded as of their trade date. Member and employer contributions are recognized in the period in which employees' salaries are reported. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

The System follows GASB guidance as applicable to proprietary funds and applies only those applicable Financial Accounting Standards Board (FASB) Statements and Interpretations, Accounting Principles Board Opinions, and Accounting Research Bulletins issued on or before November 30, 1989, that do not conflict with or contradict GASB pronouncements.

(b) Use of Estimates

Management of the System has made certain estimates and assumptions relating to the reporting of assets and liabilities, and the disclosure of contingent assets and liabilities, to prepare these financial statements in conformity with generally accepted accounting principles. Actual results could differ from those estimates.

(c) Investments

The System's investments are reported at fair value. Fair value is the amount that a plan can reasonably expect to receive for an investment in a current sale between a willing buyer and a willing seller – that is, other than in a forced or liquidation sale. The investment in the short-term investment fund, which is a fund operated by the Treasurer of the Commonwealth of Pennsylvania, is reported at cost plus allocated interest, which approximates fair value. The security lending collateral pool, which is a fund operated by the securities lending agent, also is accounted for at cost plus accrued interest. U.S. government obligations, corporate and foreign bonds and notes, and common and preferred stocks, are generally valued based on published market prices and quotations from national security exchanges and securities pricing services. Securities that are not traded on a national security exchange are valued by the asset manager or

(Continued)

COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
(a component unit of the Commonwealth of Pennsylvania)
Notes to Financial Statements (continued)
December 31, 1998 and 1997
(Dollar Amounts in Thousands)

third parties based on similar sales. Mortgage loans are valued by the asset manager using the present value of future cash flows. Real estate is primarily valued based on appraisals performed by independent appraisers or, for properties not appraised, at the present value of the projected future net income stream. Venture capital and alternative investments, which include leveraged buyouts, international private equities, and other investments, are valued based on amounts established by valuation committees. Foreign exchange contracts, which are not reported in the statement of plan net assets, are marked-to-market daily with changes in fair value recognized as part of investment income.

The Collective Trust Funds (CTF) consist primarily of domestic and international institutional index funds. The funds do not pay interest or dividends to shareholders, and reinvest all income earned on securities held by the fund. CTF income includes net appreciation on the fair value of CTF investments. The fair value of CTF is based on the reported share value of the respective fund. The CTF are principally managed by Barclays Global Investors, N.A., for which the United States Office of the Comptroller of the Currency has regulatory oversight.

Unsettled investment sales are reported as investment proceeds receivable and unsettled investment purchases are reported as investment purchases payable. Investment expenses consist of investment managers' fees and those administrative expenses directly related to the System's investment operations.

(d) Commitments

As of December 31, 1998, the System had contractual commitments totaling approximately \$1.405 million to participate in future real estate, venture capital, and alternative investments.

(e) Compensated Absences

The System accrues a liability for vacation leave as the benefits are earned by the employees to the extent the System will compensate the employee for the benefits through paid time off or some other means, such as cash payments at termination or retirement. Vacation leave vests 100% at the time it is earned up to 45 days, which are carried over to the next year at December 31. The System also accrues a liability for sick leave as the benefits are earned by the employees to the extent the System will compensate the employee for the benefits through cash payments at termination or retirement. Retiring employees of the System that meet service, age, or disability requirements are paid between 30% and 100% of sick days available at retirement, up to 163 maximum days. As of December 31, 1998 and 1997, \$1.652 and \$1.375, respectively, was accrued for unused vacation and sick leave for the System's employees.

(Continued)

COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
(a component unit of the Commonwealth of Pennsylvania)
Notes to Financial Statements (continued)
December 31, 1998 and 1997
(Dollar Amounts in Thousands)

(f) Administrative Expenses

Administrative expenses are financed through investment earnings.

(g) Federal Income Taxes

Management believes the System meets the definition of a Governmental Plan; in the System's communications with the Internal Revenue Service (IRS), it has been treated as a qualified plan, and is therefore considered exempt from federal income taxes. Therefore, the System has not requested a determination letter from the IRS relating to the status of the System under the Internal Revenue Code.

The real estate holding companies discussed in note 1 are formed and operate under the Internal Revenue Code 501(c)(25) and are exempt from federal taxes on income related to their tax exempt purpose.

(h) Risk Management

The System is exposed to various liabilities or risks of loss related to theft or destruction of assets, injuries to employees, and court challenges to fiduciary decisions. To cover such risks, the System carries directors and officers' liability insurance, and fiduciary liability insurance. It also requires asset managers to carry appropriate insurance policies. As an administrative agency of the Commonwealth, the System is accorded sovereign immunity, and it participates in a state property insurance program. As Commonwealth employees, the System's employees receive health insurance benefits, disability retirement benefits, and workers' compensation benefits. During the past three fiscal years, insurance settlements did not exceed insurance coverage.

(i) Reclassifications

Certain reclassifications were made to the fiscal year 1997 financial statements to conform with the fiscal year 1998 financial statement presentation.

(Continued)

COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
(a component unit of the Commonwealth of Pennsylvania)
Notes to Financial Statements (continued)
December 31, 1998 and 1997
(Dollar Amounts in Thousands)

(3) Description of Funds

The Code requires the System to maintain the following funds representing the reserves held for future and current benefit payments as follows:

Members' Savings Account – The fund that accumulates contributions and interest earnings of active employees totaled \$2,904 million and \$2,748 million as of December 31, 1998 and 1997, respectively.

State Accumulation Account – The fund that accumulates contributions of the employers and the earnings of the fund totaled \$15,060 million and \$12,599 million as of December 31, 1998 and 1997, respectively. The balance of this fund is actuarially determined.

Annuity Reserve Accounts – The funds from which all death and retirement benefits and supplemental annuities are paid totaled \$6,187 million and \$5,614 million for Annuitants and Beneficiaries; \$1,129 million and \$1,031 million for State Police; and \$22 million and \$20 million for Enforcement Officers as of December 31, 1998 and 1997, respectively. The balance of this fund is actuarially determined.

Supplemental Annuity Account – The fund that accumulates contributions for supplemental annuities totaled \$(1,179) million and \$(701) million, as of December 31, 1998 and 1997, respectively. The balance of this fund is actuarially determined. The negative balances represent the liability for past cost of living adjustments that are being amortized to actuarial required contributions over a period of 20 years from the effective date of each supplement.

Interest Reserve Account – The fund that accumulates all income earned by the fund and from which all administrative and investment expenses incurred by the fund and the Board necessary for operation of the System are paid. Any balance in this reserve is transferred to the State Accumulation Account at year-end.

(4) Investments

As provided by statute, the System's Board of Trustees (Board) has exclusive control and management responsibility of System funds and full power to invest the funds. In exercising its fiduciary responsibility to System membership, the Board is governed by the "prudent person" rule, which requires the exercise of due care in establishing investment policy, and has adopted its Statement of Investment Policy to formally document investment objectives and responsibilities. This policy, as well as applicable state law, establishes guidelines for permissible investments of the System, including all investment types held in the portfolio at December 31, 1998 and 1997, and at all times during those years.

(Continued)

COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
(a component unit of the Commonwealth of Pennsylvania)
Notes to Financial Statements (continued)
December 31, 1998 and 1997
(Dollar Amounts in Thousands)

The System's investments are categorized below to give an indication of the level of credit (counterparty) risk assumed by the System at December 31, 1998 and 1997. In accordance with a contractual relationship between the Commonwealth's Treasury Department and its custodial agent, substantially all investments subject to categorization are held in book entry form. Therefore, all such investments are in Category 1, which is defined as insured or registered investments for which the securities are held by the System or its agent in the System's name.

Investments may also be categorized as Category 2, which is defined as uninsured or unregistered investments for which the securities are held by the counterparty's trust department or agent in the System's name, and Category 3, which is defined as uninsured or unregistered investments for which the securities are held by the broker or dealer or by its agent but not in the System's name. However, the System does have investments that are not in any of the three defined categories because the securities are not used as evidence of the investment. Such investments are separately identified.

	1998	1997
Investments – Category 1		
United States government securities	\$ 1,881,477	892,970
Corporate and foreign bonds and notes	2,568,126	2,257,166
Common and preferred stocks	7,852,036	6,945,184
Total Category 1 investments	<u>12,301,639</u>	<u>10,095,320</u>
Investments – not categorized		
Investments held by broker/dealers under securities		
lending agreement:		
United States government securities	422,943	474,208
Corporate and foreign bonds and notes	126,737	603,620
Common and preferred stocks	272,910	464,775
Short-term investment fund	729,864	503,781
Collective trust funds	7,302,435	6,426,362
Mortgage loans	225,841	274,553
Real estate	1,990,929	1,717,167
Venture capital and alternative investments	1,104,281	738,893
Total not-categorized investments	<u>12,175,940</u>	<u>11,203,359</u>
Total investments	<u>\$ 24,477,579</u>	<u>21,298,679</u>

The System's real estate holdings that are located in the Commonwealth of Pennsylvania total approximately \$360 million and \$303 million or 18.1% and 17.6% of the real estate portfolio at December 31, 1998 and 1997, respectively. Concentrations of investments in a particular geographic area have certain risks and uncertainties associated with the concentration. The System's remaining real estate investments are not concentrated in any one geographic area or industry.

(Continued)

COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
(a component unit of the Commonwealth of Pennsylvania)
Notes to Financial Statements (continued)
December 31, 1998 and 1997
(Dollar Amounts in Thousands)

The System's investments in corporate and foreign bonds and notes include approximately \$826 million and \$725 million of high yield bonds at December 31, 1998 and 1997, respectively.

The fair value of individual investments that represent 5% or more of the System's net assets available for benefits are as follows (amounts in thousands):

	1998	1997
Barclays Global Investors N.A.:		
Equity Index Fund P - 113,172,095 and 113,172,093 units in 1998 and 1997, respectively	\$ 5,149,244	4,003,943
70/30 Enhanced U.S. Tactical Asset Allocation Fund - 36,116,702 and 41,030,514 units in 1998 and 1997, respectively	1,291,186	1,147,838

The 70/30 Enhanced U.S. Tactical Asset Allocation Fund is diversified among three collective funds: equity, which is invested primarily in Standard & Poor's 500 companies; long-term fixed income, which is invested in corporate notes and bonds; and the short-term cash fund, which is invested in money market instruments.

The System also invests in fixed income derivatives such as collateral mortgage obligations (CMOs) to increase the return to the portfolio. Some forms of the System's CMOs, namely planned amortization class securities, offer more defined cash flow characteristics, and are therefore preferred in volatile interest rate environments. Other types of the System's CMOs (interest-only strips, principal only strips, and inverse floaters) behave less predictably but can offer value in certain market conditions. CMOs pose no greater credit risk than any other investment grade holding; therefore, significant defaults are not anticipated. Investment managers control credit risk through credit evaluation and ongoing performance analysis. However, underlying risk exists to the extent that an underlying security of a pool does not meet or perform according to the terms of the CMO. Under the circumstances, the CMO has well defined rules on the remittance of the reserve pools for principal and interest for defaulted collateral. The fair value of CMOs at December 31, 1998 and 1997, was approximately \$127 million and \$330 million, respectively.

Through the collective trust funds, the System also indirectly holds certain derivative financial instruments. The collective trust funds participate in securities lending and invest cash collateral in an investment pool that invests in foreign exchange forwards, futures contracts, and asset, total return, and basis swap contracts. These instruments are held to hedge foreign exchange exposure, to synthetically create floating rate returns, and to manage interest rate risk by altering the average life of the portfolio.

(Continued)

COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
(a component unit of the Commonwealth of Pennsylvania)
Notes to Financial Statements (continued)
December 31, 1998 and 1997
(Dollar Amounts in Thousands)

(a) Commission Recapture Program

The System has commission recapture contracts with several brokers. These contracts stipulate that the brokers pay a percentage of commissions earned on investments directly to vendors for services provided to the System. During the years ended December 31, 1998 and 1997, the System earned \$875 and \$1,365 of benefits resulting from a commission recapture program, respectively. The System used the program to pay approximately \$133 and \$166 on consulting, advisory, and other expenditures for the years ended December 31, 1998 and 1997, respectively. At December 31, 1998 and 1997, the System has accumulated \$2,487 and \$1,745, respectively, of benefits that are available for future expenditures.

(b) Securities Lending

In accordance with a contract between the Commonwealth's Treasurer and its custodian, the System participates in a securities lending program. State statutes neither specifically authorize nor prohibit the lending of the System's securities.

The custodian, acting as lending agent, lends the System's equity, debt, and money market securities for cash, securities, or letter-of-credit collateral. Collateral is required at 102% of the fair value of the securities loaned except for the equity securities of non-U.S. corporations, for which collateral of 105% is required. Collateral is marked-to-market daily. If the collateral falls below guidelines for the fair value of the securities loaned, additional collateral is obtained. Cash collateral is invested by the lending agent in accordance with investment guidelines approved by the Treasurer. The lending agent cannot pledge or sell securities collateral unless the borrower defaults.

As of December 31, 1998 and 1997, the System's credit exposure to individual borrowers was limited because the amounts the System owed the borrowers exceeded the amounts the borrowers owed the System. The Treasurer's contract with the lending agent requires the agent to indemnify the System if the borrowers fail to return the underlying securities and the collateral is inadequate to replace the loaned securities or if the borrowers fail to pay income distributions on the loaned securities.

All securities loans at December 31, 1998 and 1997, could be terminated on demand by either the lending agent or the borrower. Cash collateral is invested, together with the cash collateral on securities loans of other Commonwealth entities, in a short-term collective investment pool. The duration of the investments in the pool at December 31, 1998 and 1997, was 33 days and 60 days, respectively. The relationship between the average maturities of the investment pool and

(Continued)

COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
(a component unit of the Commonwealth of Pennsylvania)
Notes to Financial Statements (continued)
December 31, 1998 and 1997
(Dollar Amounts in Thousands)

the System's loans is affected by the maturities of the loans made by other entities in the investment pool. In addition, the interest rate risk posed by mismatched maturities is affected by other program features, such as the lending agent's ability to reallocate securities loans among all of its lending customers.

As of December 31, 1998 and 1997, respectively, the fair market value of loaned securities was \$822,590 and \$1,542,603; the fair value of the associated collateral was \$842,907 and \$1,593,520 of which \$802,958 and \$1,439,462 was cash. The securities lending collateral pool is not categorized because securities are not used as evidence of the investment.

(5) Financial Instruments with Off-Balance Sheet Risk

The System enters into foreign exchange contracts, such as forward and spot contracts, to hedge foreign currency exposure. The System is not a dealer but an end user of these instruments. The contracts are used primarily to enhance performance and reduce the volatility of the portfolio. The System is exposed to credit risk in the event of nonperformance by counterparties to financial instruments. As the System generally enters into transactions with institutions regarded as meeting high standards of credit worthiness, no losses associated with counterparty nonperformance on derivative financial instruments have been incurred. Legal risk is mitigated through careful selection of brokers and an extensive process of review of all documentation. The System is exposed to market risk—the risk that future changes in market conditions may make an instrument less valuable. Exposure to market risk is managed within risk limits set by management by buying or selling instruments or entering into offsetting positions.

Foreign exchange contracts involve an agreement to exchange the currency of one country for the currency of another country at an agreed-upon price and settlement date. At December 31, 1998, the System had contracts maturing through December 31, 1999, to purchase or sell foreign currency. The \$7,706,723 of total foreign currency contracts outstanding at December 31, 1998, consists of "buy" contracts, which represent the U.S. dollar equivalents of commitments to purchase foreign currency commitments of \$4,162,798 and "sell" contracts, which represent U.S. dollar equivalents of commitments to sell foreign currency commitments of \$3,543,925.

At December 31, 1997, the System had contracts maturing through December 3, 1998, to purchase or sell foreign currency. The \$5,782,060 of total foreign currency contracts outstanding at December 31, 1997, consists of "buy" contracts, which represent the U.S. dollar equivalents of commitments to purchase foreign currency commitments of \$2,213,101 and "sell" contracts, which represent U.S. dollar equivalents of commitments to sell foreign currencies of \$3,568,959.

Net unrealized gains (losses) on foreign currency contracts were approximately \$(35.6) million and \$50.6 million at December 31, 1998 and 1997, respectively.

(Continued)

COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
(a component unit of the Commonwealth of Pennsylvania)
Notes to Financial Statements (continued)
December 31, 1998 and 1997
(Dollar Amounts in Thousands)

(6) Pension Plan for Employees of the System

The System also makes contributions to the System as an employer. The System's employees' contribution requirements and benefits are described in note 1 to these financial statements. The System's contributions for the years ended December 31, 1998, 1997 and 1996, were \$486, \$467 and \$556, respectively, which were equal to the required contributions each year.

(7) Litigation and Contingencies

The System is involved in various individual lawsuits, generally related to benefit payments, which, if settled adversely, could increase estimated actuarial liabilities by up to \$1 billion. The individual cases involve legal issues that, if extended to the entire membership, may result in significant costs to the System. If such an event were to occur, the additional costs would be recovered by the System through adjustments to the employer contribution rate.

(8) Relationships with Other Commonwealth Agencies

The System is established by state law as an independent administrative board of the Commonwealth and is directed by a governing board that exercises control and management of the System, including the investment of its assets. The System's board has eleven members including the State Treasurer, ex officio, two Senators or former Senators, two members or former members of the House of Representatives, and six members appointed by the Governor, one of whom is an annuitant of the System. At least five board members are active members of the System and at least two have 10 or more years of credited service. The Treasurer of the Commonwealth of Pennsylvania is the custodian of the State Employees' Retirement System's fund.

Required Supplementary Information

COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
(a component unit of the Commonwealth of Pennsylvania)
Schedule 1 – Schedule of Funding Progress
(Unaudited – See Accompanying Auditors' Notes)
(Dollar Amounts in Millions)

Actuarial valuation year	Actuarial value of assets	Actuarial accrued liabilities (AAL)	Unfunded actuarial accrued liabilities (UAAL)	Ratio of assets to AAL	Covered payroll	UAAL as a percentage of covered payroll
1997	\$ 18,565	\$ 17,288	\$ (1,277)	107.4 %	\$ 4,219	(30.3) %
1996	16,841	15,937	(904)	105.7	3,996	(22.6)
1995	15,510	15,067	(443)	102.9	3,861	(11.5)
1994	13,992	13,742	(250)	101.8	3,714	(6.7)
1993	13,061	12,214	(847)	106.9	3,488	(24.3)
1992	11,769	11,488	(281)	102.4	3,284	(8.6)

Schedule 2 – Schedule of Employer Contributions
(Dollar Amounts in Thousands)

Year ended December 31	Annual required contributions	Percentage contributed
1997	\$ 324,093	100.0 %
1996	373,902	100.0
1995	376,692	102.1
1994	342,158	100.2
1993	310,089	98.1
1992	319,093	100.0

See accompanying notes to schedules of funding progress and employer contributions.

**COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM**

(a component unit of the Commonwealth of Pennsylvania)

Notes to Schedules of Funding Progress and Employer Contributions

Unaudited – See Accompanying Auditors' Report

Actuarial information as of the latest actuarial valuation:

Valuation date	December 31, 1997
Actuarial cost method	Variation of entry age actuarial cost method (a)
Amortization method	Increasing (5 percent annually)
Remaining amortization period	13 to 19 years, closed
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investments rates of return (b)	8.5%
Projected salary increases (b)	5.16% - 8.98%
Cost-of-living adjustments (c)	As described below

(a) A variation of the entry age normal actuarial cost method is used to determine the liabilities and costs related to all of the System's benefits including superannuation, withdrawal, death and disability benefits. The significant difference between the method used for the System and the typical entry age normal actuarial cost method is that the normal cost is based on the benefits and contributions for new employees rather than for all current employees from their date of entry. This variation should produce approximately the same results as the typical method over the long run.

(b) Includes inflation at 3%.

(c) Information presented in the required supplementary schedules was determined as part of the actuarial valuation at the dates indicated. The December 31, 1997 valuation includes the effect of a cost of living allowance (COLA) adjustment to annuitants with an effective date of retirement on or prior to June 30, 1997. The adjustment ranged from 1.86% to 25%, depending on the date of retirement, and increased actuarial accrued liabilities by \$478 million.

(Continued)

**COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM**

(a component unit of the Commonwealth of Pennsylvania)

Notes to Schedules of Funding Progress and Employer Contributions (continued)

Unaudited – See Accompanying Auditors' Report

Significant Changes in Prior Years

Certain changes have been made in the plan or in actuarial assumptions that affect the trends in the amounts reported in the schedule of funding progress. Those changes also affected the trend in the annual required contributions reported in the schedule of employer contributions. Those changes were effective for the actuarial valuation report dated as of December 31, 1995.

For actuarial valuations through December 31, 1994, actuarial assumptions were as follows:

Actuarial assumptions:	
Investments rates of return	9.25%
Projected salary increases	6.70%

In addition the demographic assumption was changed from the 1971 Group Annuity Mortality Table (GAM - 71) to the 1983 Group Annuity Mortality Table (GAM - 83) for current and future employees to reflect continuing mortality improvement. The GAM - 71 continues to apply for current retirees.

Also, in 1994, the actuarial assumption changed to reflect the adoption of a new pay scale that became effective January 1, 1994, and compressed the previous schedule of 35 steps to 20 steps. The new scale provides longevity increases for members who have at least one year of service. In addition, Act 1994-29 provided for a cost of living adjustment (COLA) to annuitants with an effective date of retirement on or prior to June 30, 1992.

In the valuation years ended December 31, 1997, 1996, 1995, 1993, and 1991, actual investment earnings exceeded the expected rates of return, thereby causing an increase in the valuation years' actuarial value of assets reported in the schedule of funding progress and reduction in the following years' annual required contribution reported in the schedule of employer contributions.

COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
(a component unit of the Commonwealth of Pennsylvania)
Year 2000 Supplementary Information
Unaudited – See Accompanying Auditors' Report

The year 2000 issue is the result of shortcomings in electronic data processing systems and other electronic equipment that may adversely affect the government's operations as of January 1, 2000.

The State Employees' Retirement System (SERS) has completed an inventory of computer systems and other electronic equipment which provide mission critical services for the agency that may be affected by the year 2000 issue. The SERS' effort has been coordinated with the Commonwealth-wide year 2000 initiative. SERS has identified the following mission critical system requiring year 2000 remediation:

The State Employees' Retirement Information System (SE-RIS) is the system that processes the employee and employer contributions, updates the member records, and processes the benefit payments. The system was remediated and tested as of June 30, 1998. Additional testing will occur during 1999.

SERS has inventoried and remediated, or is in the process of remediating, all electronic equipment determined to be affected by the year 2000 issue that support mission critical applications.

Because of the unprecedented nature of the year 2000 issue, its effects and the success of related remediation efforts will not be fully determinable until the year 2000 and thereafter. Management cannot assure that SERS is or will be year 2000 ready, that SERS's remediation efforts will be successful in whole or in part, or that parties with whom SERS does business will be year 2000 ready.

A Year 2000 Readiness Disclosure

This is a "Year 2000 Readiness Disclosure" as defined by the Year 2000 Information and Readiness Disclosure Act, Pub. L. 105-271. Any information set forth herein regarding products or services not produced or provided by the State Employees' Retirement System ("SERS") are "Republications" as defined by the Year 2000 Information and Readiness Disclosure Act, based on information supplied by other companies about the products and services they offer. SERS has not independently verified the contents of these Republications and takes no responsibility for the accuracy or completeness of the information contained in such Republications.

Additional Financial Information

COMMONWEALTH OF PENNSYLVANIA STATE EMPLOYEES' RETIREMENT SYSTEM

Schedule of Administrative Expenses

Year Ended December 31, 1998

Prepared by SERS Staff

Personnel Services:

Salaries	\$ 7,862,282	
Benefits	2,747,346	
Temporary Personnel Wages, Overtime, & Outservice Training	180,843	
Total Personnel Service		\$ 10,790,471

Professional Services:

Consultant	2,374,061	
Treasury Department Services	621,905	
Commonwealth Central	409,110	
Legal Fees	73,263	
EDP Contractual Services Vendor Provided	39,947	
Total Professional Services		3,518,286

Rentals:

Rent of Real Estate	1,059,561	
Other Equipment Rental	91,526	
Motorized Equipment Rental	53,468	
Total Rentals		1,204,555

Fixed Assets:

Purchase of EDP Equip Comps & Periph	1,123,946	
Office Equipment	8,260	
Total Fixed Assets		1,132,206

Communication:

Postage	420,588	
Telephone	159,238	
Printing & Advertising	109,286	
Total Communication		689,112

Other Expenses

EDP Software	295,216	
Supplies	239,236	
Travel & Conferences	150,974	
Maintenance	146,754	
Subscriptions and Memberships	54,247	
Total		886,427

Total Administrative Expenses	\$ 18,221,057
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COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
Schedule of Investment Expenses and Consultant Fees
Year Ended December 31, 1998
Prepared by SERS Staff

Investment Expenses

<u>Investment Manager Fees</u>		Fees (in Basis Points)
	Fees	
Stocks	\$ 29,830,728	21.9
Fixed Income	10,392,328	20.9
Tactical Asset Allocation	791,827	6.5
Real Estate	14,002,130	75.3
Venture Capital	12,227,525	377.3
Alternative Investments	13,992,624	257.1
Total Investment Manager Fees	81,237,162	35.9
<u>Investment Related Expenses</u>		
Legal Fees	714,648	
Start-up Costs	321,900	
Other	95,074	
Total Other Fees	1,131,622	
Total Investment Expenses	\$ 82,368,784	

Consulting Fees

<u>Firm</u>	<u>Category</u>	<u>Consulting Fee</u>
Cambridge Associates, Inc.	Private Equity	\$ 639,722
DoxSys, Inc.	EDP	435,185
Unisys Corporation	EDP	395,363
BARRA Rogers Casey, Inc.	General Investment	367,767
Hay/Huggins Company, Inc.	Actuary	175,794
The Townsend Group	Real Estate	147,000
Imerge Consulting	EDP	101,119
Other		112,111
Total Consulting Fees		\$ 2,374,061

INVESTMENT SECTION

Report on Investment Activity

Peter M. Gilbert
Chief Investment Officer

June 1999

Dear Members:

As of year-end 1998, the assets of your pension Fund exceeded \$24 billion. According to the year-end survey by *Pension & Investments* magazine, this ranks the State Employees' Retirement System (SERS) as the 39th largest employee benefit fund in the U.S. The assets of the Fund grew by over \$2.8 billion in 1998, with the total Fund producing a return of 16.3% after fees and benefit payments. The longer-term results are equally impressive, with annualized returns of 16.7% over the past three years, 14.5% over the past five years and 13.3% over the past 10 years. The Fund currently enjoys fully-funded status, requiring lower employer contributions to meet the Fund's higher benefit obligations and resulting in savings of millions of dollars to the Commonwealth's taxpayers. The financial markets have been very good over the past 10 years, enabling the Fund to achieve annualized double-digit returns over that time period. This compares very favorably with the actuarial assumed annual rate of return of 8.5%.

Most important, these returns have been earned in accordance with the Investment Policies and Investment Objectives set out by the SERS Board of Trustees operating as fiduciaries in the sole interest of the beneficiaries and members of the Fund. The primary Investment Objectives over the long run are to assure the adequate accumulation of reserves in the Fund at the least cost to the citizens of the Commonwealth; to achieve a positive real total rate of return above inflation; to achieve an absolute rate of return not less than the actuarial investment return assumption; and to achieve and maintain the Fund in excess of the actuarial accrued benefit liability. The Investment Objectives further state that the Board "seeks to meet these objectives within acceptable risk parameters through adherence to a policy of diversification of investments by type, industry, investment manager style and geographic location." As a long-term investor, this concept of diversification is key, allowing the Fund to achieve its Investment Objectives while reducing risk.

The SERS Investment Office, in conjunction with the Fund's three consultants, performs an annual review of the asset allocation, recommending any modifications to asset classes and future allocations. The results are reviewed and, when approved, adopted by the Board. The asset allocation decisions are among the most important the Board makes in striving to achieve the Fund's Investment Objectives. Enabled by the state Legislature's passage of "prudent person" legislation in 1994, the fund has successfully increased diversification of asset classes in which we may invest. The investment summary on the following pages shows the diversification of asset classes and investment manager styles as well as the diversification by industry and geographic location within and across asset classes. Commensurate with diversification is the reduction of risk the Fund has been able to achieve. Put simply, we are not trying to hit a home run; rather, we attempt to hit a lot of singles and get on base so we can score more frequently. We seek a broad range of opportunities so the odds of achieving the Fund's long-term Investment Objectives are in our favor.

The strong investment performance results over the past decade have been driven most notably by the extended bull market in U.S. stocks and a record breaking eight-year expansion of the U.S. economy. During this period of rising markets and economic expansion, we have experienced historically low economic and financial volatility. Most of the surprises during this time have been positive and on the upside. We have been

blessed with both low inflation and low unemployment at the same time that growth has persisted. Because things have been so good, there is a tendency to underestimate risk going forward.

It is for these reasons that the SERS Investment Office continuously monitors economic and market events and works to position the Fund through broad diversification to be in a position to address a variety of different economic scenarios. Consistent with this strategy, investments were expanded in the real estate and private equity asset classes last year to further diversify investment styles and geographic exposures. In addition, we continued to rebalance the Fund on an ongoing basis toward our long-term asset allocation objectives in combination with making new investments and providing capital to meet benefit obligations. Under the supervision and guidance of the Board, we believe the Fund structure is sound and has the ability to endure under a variety of market environments. We believe the Fund is well positioned to ensure that SERS members receive the pension benefits that are due them.

Sincerely,



Investment Policies

The State Employees' Retirement Board adopted a formal Statement of Investment Policy in 1979. It has been revised periodically, principally to reflect and incorporate legislative changes governing investments. The purpose of the statement is to formalize the Board's investment objectives, policies, and procedures, to establish guidelines for the investment of Fund assets, and to define the duties and responsibilities of the various entities involved in the investment process. The major elements of the statement are:

- ◆ As fiduciaries, the Board will exercise that degree of judgment, skill, and care under the circumstances then prevailing which persons of prudence, discretion, and intelligence, who are familiar with such matters, exercise in the management of their own affairs in investment matters;
- ◆ The Fund's overall investment objective is to provide a total rate of return, over full economic cycles, which exceeds the return of a fully diversified market portfolio within each asset class. The Board seeks to meet this objective within acceptable risk parameters through adherence to a policy of diversification of investments by type, industry, quality, and geographic location;
- ◆ The Board employs an investment staff and also contracts with investment advisors and consultants to provide expert, professional judgment in all investment decisions;
- ◆ An annual *Investment Plan* is prepared to control the allocation of funds during the year among investment advisors and categories of assets;
- ◆ Guidelines are established for each category of assets used by the Fund's investment advisors to provide a framework for monitoring quality, diversification, and liquidity; and
- ◆ Where investment characteristics, including yield, risk, and liquidity, are equivalent, the Board's policy favors investments which have a positive impact on the economy of Pennsylvania.

Investment Objectives

To assure an adequate accumulation of reserves in the Fund at the least cost to the citizens of the Commonwealth and to provide some protection against the erosion of principal by inflation, the long-term investment objectives of the Fund, are:

- ◆ Achieve and maintain the State Employees' Retirement Fund in excess of Actuarial Accrued Benefit Liability;
- ◆ Over the long run, achieve a positive real total rate of return (with inflation measured by the GDP Implicit Price Deflator);
- ◆ Over the long run, achieve an absolute total rate of return not less than the actuarial investment return assumption;
- ◆ Achieve in Domestic Stocks a total return that exceeds the total return of the Wilshire 5000 Index;*
- ◆ Achieve in International Stocks a total return that exceeds the total return of the SERS Custom International Stock Index;
- ◆ Achieve in the Fixed Income asset class a total return that exceeds the total return of the SERS Fixed Income Custom Index;
- ◆ Achieve in the Equity Real Estate asset class a total return that exceeds the total return of the NCREIF Index;
- ◆ Achieve in the Cash asset class a total return that exceeds the total return on U.S. Treasury Bills (90 days);
- ◆ Private Equity: Achieve in the Venture Capital asset class a total return that exceeds either the Venture Economics' relevant Vintage Year Median Returns or relevant returns furnished for benchmark purposes by SERS's Venture Capital/Alternative Investments consultant. Achieve in the Alternative Investments asset class a total return that exceeds either market returns for similar types of alternative investments or relevant returns furnished for benchmark purposes by SERS's Venture Capital/Alternative Investments consultant.

Total return includes income and both realized and unrealized gains and losses and is computed on market value. The Board seeks to meet these objectives within acceptable risk parameters through adherence to a policy of diversification of investments by type, industry, investment manager style, and geographic location.

** Meeting January 27, 1999, the SERS Board adopted the Russell 3000 Index as the benchmark for the U.S. Stock asset class, replacing the Wilshire 5000 Index.*

Investment Results

Schedule of Portfolio Returns after Fees For Periods Ending December 31, 1998

	12 Months	3 Years	5 Years	10 Years
Domestic Equities	21.7%	24.2%	21.0%	17.8%
<i>Wilshire 5000</i>	23.5%	25.2%	21.7%	18.1%
International Equities	10.8%	10.1%	5.6%	9.2%
<i>SERS Custom Index (1)</i>	12.6%	6.8%	6.8%	4.4%
Fixed Income	9.4%	8.8%	8.7%	10.2%
<i>80% SERS Custom Bond / 20% Salomon World Government ex US (50% Hedged)</i>	10.6%	7.9%	8.1%	9.6%
Cash	5.7%	5.6%	5.4%	7.2%
<i>90 Day T Bills</i>	5.4%	5.3%	5.1%	5.6%
Tactical Asset Allocation	27.7%	22.2%	19.8%	16.6%
<i>70% S&P 500 / 30% Long Bond</i>	25.0%	21.7%	19.3%	16.8%
Real Estate (3)	13.2%	13.7%	10.4%	5.1%
<i>NCREIF</i>	15.0%	13.1%	10.6%	5.3%
Venture Capital (3)	12.0%	20.5%	20.7%	13.4%
Alternative Investments (3)	27.0%	25.4%	19.4%	11.2%
Total Portfolio Returns	16.3%	16.7%	14.5%	13.3%

The performance calculations were prepared using a time-weighted rate of return based on the market rate of return in accordance with AIMR's Performance Presentation Standards

(1) The SERS Custom International Index is constructed by combining the MSCI EAFE index and the MSCI Emerging Markets Free Index, then reducing Japan to half the market capitalization weight of the Pacific Basin and redistributing the remainder to other Pacific Basin Markets.

(2) The SERS Custom Bond Index is constructed using the following indices: 20% Lehman Brothers Intermediate Government Bond Index; 30% Lehman Brothers Long Term Government Bond Index; 25% Lehman Brothers Corporate Bond Index; and 25% Lehman Brothers Mortgage Backed Securities Index

(3) Results for Real Estate and Private Equity are lagged one quarter.

Asset Allocation

COMMONWEALTH OF PENNSYLVANIA STATE EMPLOYEES' RETIREMENT SYSTEM

Asset Allocation Report

December 31, 1998

(Unaudited)

Total Fund Summary

	Market Value	% of Total Fund	1998 Plan Policy Target
Domestic Stocks	\$ 10,113.2	41.9%	40.0%
International Stocks	4,272.4	17.7%	20.0%
Currency Overlay	(25.4)	-0.1%	0.0%
Fixed Income	5,216.5	21.7%	23.0%
Cash	155.2	0.6%	0.0%
Tactical Asset Allocation	1,291.2	5.3%	5.0%
Real Estate	2,000.9	8.3%	8.5%
Venture Capital	426.8	1.8%	
Alternative Investments	677.5	2.8%	
Total Private Equity	1,104.3	4.6%	3.5%
	<hr/>		
Total Fund	<u>\$ 24,128.3</u>	<u>100.0%</u>	<u>100.0%</u>

Numbers in this report may not add due to rounding.

Asset Allocation Report (continued)
December 31, 1998
Unaudited
Domestic Stocks
Passively Managed Portfolios

Barclays - Equity Index Fund P (S&P 500)	\$ 5,149.2	50.9%	35.8%	21.33%
Barclays - Extended Equity Market Fund	220.3	2.2%	1.5%	0.91%
<i>Domestic Passive Stocks Total</i>	5,369.5	53.1%	37.3%	22.24%

Actively Managed Portfolios

Alliance Capital Management	376.0	3.7%	2.6%	1.56%
Dietche & Field Advisers	114.8	1.1%	0.8%	0.48%
Emerald Advisers - PA Portfolio	72.7	0.7%	0.5%	0.30%
Fidelity Management Trust Company	200.0	2.0%	1.4%	0.83%
Iridian Asset Management	418.1	4.1%	2.9%	1.73%
J.P. Morgan Investment Management	223.0	2.2%	1.5%	0.92%
Loomis, Sayles & Company	163.6	1.6%	1.1%	0.68%
MacKay Shields Financial Corporation	146.6	1.4%	1.0%	0.61%
Mellon Equity Associates - PA Portfolio	92.4	6.6%	4.7%	2.77%
Mellon Equity Associates - Special	669.5	0.9%	0.6%	0.38%
Montag & Caldwell	329.8	3.3%	2.3%	1.37%
Provident Investment Counsel	875.9	8.7%	6.1%	3.63%
Provident Investment Counsel - Stellar Fund	100.5	1.0%	0.7%	0.42%
AXA Rosenberg Investment Management LLC	211.5	2.1%	1.5%	0.88%
Trinity Investment Management Corporation	624.5	6.2%	4.3%	2.59%
Trinity Small Cap Value	97.8	1.0%	0.7%	0.40%
Zevenbergen Capital	27.2	0.3%	0.2%	0.11%
<i>Domestic Active Stocks Total</i>	4,743.7	46.9%	33.0%	19.65%

Domestic Stocks Total

\$ 10,113.2	100.0%	70.3%	41.89%
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International Stocks
Passively Managed Portfolios

Barclays - Europe Funds	\$ 608.5	14.2%	4.2%	2.52%
Barclays - Australia/New Zealand Funds	33.2	0.8%	0.2%	0.14%
<i>International Passive Stocks Total</i>	641.7	15.0%	4.5%	2.66%

Actively Managed Portfolios

Credit Suisse Asset Management - Core	687.4	16.0%	4.8%	2.84%
GAM Int'l Management - Pacific Basin ex	95.6	2.2%	0.7%	0.40%
J.P. Morgan Investment Management - Japan	249.9	5.8%	1.7%	1.03%
Marathon Asset Management - Europe	252.8	6.0%	1.8%	1.06%
Mercury Asset Management Int'l - Small Cap	307.2	7.2%	2.1%	1.27%
Miller Anderson & Sherrerd - Core	618.1	14.5%	4.3%	2.56%
Morgan Stanley Dean Witter - Asia ex Japan	64.2	1.6%	0.5%	0.28%
Pictet Int'l Management - Small Cap/Emg Mkts	272.8	6.4%	1.9%	1.13%
Scottish Widows Investment Mgmt-Europe	295.4	6.9%	2.1%	1.22%
Seligman Henderson Co. - Small Cap	195.0	4.6%	1.4%	0.81%
Templeton Investment Counsel - Core	592.4	13.9%	4.1%	2.45%
Liquidation Account	0.1	0.0%	0.0%	0.00%
<i>International Active Stocks Total</i>	3,630.7	85.0%	25.3%	15.06%

International Stocks Total

\$ 4,272.4	100.0%	29.7%	17.71%
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Domestic and International Stocks Total

\$ 14,385.7	100.0%	59.61%
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	(\$ in millions) Market Value	% of Total Currency Overlay	% of Total Fund
Currency Overlay			
Pareto Partners	\$ (2.5)	9.9%	-0.01%
Record Treasury	(22.9)	90.1%	-0.09%
Overlay Total	\$ (25.4)	100.0%	-0.11%

	(\$ in millions) Market Value	% of Total Fixed Income	% of Total Fund
Fixed Income			
Passively Managed Core Portfolios			
Mellon Bond Associates	\$ 691.5	13.2%	2.87%
Actively Managed Core Portfolios			
Fischer Francis Trees & Watts - International	584.9	11.3%	2.44%
J. P. Morgan Investment Management	741.4	14.2%	3.07%
Miller, Anderson & Sherrerd - Domestic	964.5	18.5%	4.00%
Miller, Anderson & Sherrerd - Global	905.1	17.6%	3.81%
Smith Graham & Co.	30.4	0.6%	0.13%
Active Core Fixed Income Port. Total	3,226.3	62.0%	13.45%
Core Fixed Income Portfolios Total	3,917.8	75.2%	16.31%
Actively Managed Specialty Portfolios			
Fidelity Management Trust Company - CMBS	100.6	1.8%	0.40%
John Hancock	185.4	3.6%	0.78%
Legg Mason Real Estate Advisors	244.7	4.7%	1.01%
Trust Company of the West - Funds III	0.5	0.0%	0.00%
W. R. Huff Asset Management	767.5	14.7%	3.19%
Active Specialty Fixed Income Port. Total	1,298.6	24.8%	5.37%
Fixed Income Total	\$ 5,216.5	100.0%	21.69%

	(\$ in millions) Market Value	% of Total Cash	% of Total Fund
Cash			
Pennsylvania State Treasury - STIF *	\$ 155.2	100.0%	0.62%

* SERS investment advisors' cash balances are reflected within their own market values but in fact are invested in the Pennsylvania Treasury Short Term Investment Fund (STIF). The total STIF balance reported by the Master Trust Custodian was \$729.9 million at the end of the month.

	(\$ in millions) Market Value	Allocation (Stocks / Bonds / Cash)	% of Total Fund
Tactical Asset Allocation			
Barclays - Enhanced US 70/30 TAA Fund	\$ 1,291.2	90% / 10% / 0%	5.35%

Asset Allocation Report (continued)
December 31, 1998
Unaudited

Real Estate	(\$ in millions)	% of Total	% of Total
Separate Account Portfolios	Market Value**	Real Estate	Fund
CRA Real Estate Securities	\$ 250.1	12.4%	1.02%
Forest Investment Associates	118.8	6.0%	0.49%
Heitman/JMB	387.5	19.4%	1.60%
LaSalle Partners	141.6	7.0%	0.58%
Lowe Enterprises	294.3	14.7%	1.22%
Legg Mason / RAI Real Estate Advisors	160.3	8.0%	0.66%
<i>Separate Account Portfolios Total</i>	<u>1,352.6</u>	<u>67.6%</u>	<u>5.59%</u>
Pooled Fund Portfolios			
Allegis - 4 pooled funds	101.8	5.1%	0.42%
Apollo III	30.7	1.5%	0.13%
Alex Brown / LaSalle Profile Fund I	0.0	0.0%	0.00%
Berwind Property Group	12.3	0.6%	0.05%
Blackstone	43.4	2.2%	0.18%
AEW CIIF-II	12.0	0.6%	0.05%
Goldman Sachs - Whitehall	81.0	4.0%	0.33%
Heitman - California Land Venture	1.2	0.1%	0.01%
JMB Group Trust III	29.6	1.5%	0.12%
John Hancock	2.8	0.1%	0.01%
Lubert Adler Real Estate II	5.3	0.3%	0.02%
SSR Realty (MIAF I & MIAF II)	33.6	1.7%	0.14%
Oxford Real Estate	27.6	1.4%	0.11%
Prudential	3.4	0.2%	0.01%
Sentinel Corporation	49.2	2.5%	0.20%
Starwood Capital	51.1	2.6%	0.21%
Westbrook II	55.4	2.8%	0.23%
Westbrook III	6.1	0.3%	0.03%
TCW VI/OCM Opportunity Fund A & B	101.8	5.1%	0.42%
<i>Pooled Fund Portfolios Total</i>	<u>648.3</u>	<u>32.4%</u>	<u>2.68%</u>
Real Estate Total	<u>\$ 2,000.9</u>	<u>100.0%</u>	<u>8.26%</u>

**** Market Values represent September 30, 1998, values as reported by the investment managers adjusted for allocations and distributions. Values for publicly traded REITs represent values reported as of December 31, 1998.**

Private Equity - Venture Capital	(\$ in millions) Market Value**	% of Total Venture	% of Total Fund
Advent VII	\$ 24.2	5.7%	0.10%
Advent VIII	10.6	2.5%	0.04%
APA/Fostin - Fund I	3.0	0.7%	0.01%
Bachow III	25.6	6.0%	0.11%
CEO Venture Fund II	5.4	1.3%	0.02%
Edison III	26.0	6.1%	0.11%
Fairview Capital I	3.9	0.9%	0.02%
Fairview Capital II	0.9	0.2%	0.00%
Fostin Capital II	2.1	0.5%	0.01%
Grotech Partners III	1.4	0.3%	0.01%
Grotech Partners IV	19.2	4.5%	0.08%
Grotech Partners V	3.3	0.8%	0.01%
Halpern & Denny II	7.1	1.7%	0.03%
Healthcare Ventures III	10.6	2.5%	0.04%
Healthcare Ventures V	14.1	3.3%	0.06%
Keystone II	1.7	0.4%	0.01%
Keystone IV	12.5	2.9%	0.05%
Keystone V	15.7	3.7%	0.06%
NEA VI	27.7	6.5%	0.11%
NEA VII	28.1	6.6%	0.12%
NEPA Venture I	1.1	0.3%	0.00%
NEPA Venture II	10.9	2.6%	0.05%
NEPA - MidAtlantic Venture III	6.7	1.6%	0.03%
PA Fund I (APA/Fostin II)	18.9	4.4%	0.08%
PA Fund III	44.8	10.5%	0.19%
Polaris Venture Capital	15.3	3.6%	0.06%
Polaris Venture Capital II	1.0	0.2%	0.00%
PNC Venture Group I	0.1	0.0%	0.00%
Sprout VII	21.2	5.0%	0.09%
Summit Venture IV	19.8	4.6%	0.08%
Summit Venture V	8.3	2.0%	0.03%
Technology Leaders III	8.4	2.0%	0.03%
Weston Presidio	16.7	3.9%	0.07%
Whitney Equity Partners III	5.7	1.3%	0.02%
Zero Stage Capital-II	0.4	0.1%	0.00%
Distribution Account	4.6	1.1%	0.02%
Venture Capital Total	\$ 426.8	100.0%	1.77%

** Market Values represent September 30, 1998, values as reported by the investment managers adjusted for allocations and distributions. Values for the Distribution Account for publicly traded securities represent values reported as of December 31, 1998.

Private Equity - Alternative Investments	(\$ in millions) Market Value**	% of Total Alternative Investments	% of Total Fund
ABRY Broadcast Partners III	\$ 13.5	2.0%	0.06%
APAX Partners - France	3.7	0.5%	0.02%
APAX Partners - Germany	2.5	0.4%	0.01%
APAX Partners - Germany II	11.1	1.6%	0.05%
APAX Partners - UK VI	4.3	0.6%	0.02%
Apollo Advisors	16.1	2.4%	0.07%
B III Capital Partners (DDJ)	32.9	4.9%	0.14%
Blackstone II	30.6	4.5%	0.13%
Blackstone III	10.1	1.5%	0.04%
Brentwood Associates Buyout Fund	4.8	0.7%	0.02%
Charterhouse II	27.5	4.1%	0.11%
Charterhouse III	12.4	1.8%	0.05%
Clayton, Dubilier & Rice V	41.0	6.1%	0.17%
Code, Hennessy & Simmons I	1.6	0.2%	0.01%
Code, Hennessy & Simmons II	14.3	2.1%	0.06%
Code, Hennessy & Simmons III	18.7	2.8%	0.08%
DLJ Merchant Banking Fund II	31.1	4.6%	0.13%
Frontenac VII	15.2	2.2%	0.06%
Golder, Thoma, Cressey & Rauner V	10.9	1.6%	0.05%
Golder, Thoma, Cressey & Rauner VI	5.3	0.8%	0.02%
Hancock IPEP II	11.0	1.6%	0.05%
Harvorvest III	1.2	0.2%	0.01%
Hellman & Friedman II	3.7	0.5%	0.02%
Hellman & Friedman III	21.1	3.1%	0.09%
Kelso V	79.9	11.8%	0.33%
Kelso VI	0.0	0.0%	0.00%
Landmark IV	6.7	1.0%	0.03%
Landmark V	15.7	2.3%	0.07%
Lexington II	4.4	0.6%	0.02%
Madison Dearborn I	22.0	3.3%	0.09%
Madison Dearborn II	19.2	2.8%	0.08%
Media Communications Partners	17.0	2.5%	0.07%
Murphy & Fauver	2.0	0.3%	0.01%
Oaktree Opportunities	28.9	4.3%	0.12%
Oaktree Opportunities II	22.0	3.2%	0.09%
Oaktree Principal Opportunities	18.3	2.7%	0.08%
RRZ PA Fund I	0.2	0.0%	0.00%
RRZ Private Equity Fund	10.0	1.5%	0.04%
Schroder Ventures UK III	4.7	0.7%	0.02%
Schroder Ventures UK IV	7.3	1.1%	0.03%
Schroder European V	10.5	1.5%	0.04%
TCW - Fund V	12.6	1.9%	0.05%
Thomas Lee Equity Fund IV	12.0	1.8%	0.05%
TPG Partners II	30.7	4.5%	0.13%
Vestar Capital III	8.7	1.3%	0.04%
<i>Alternative Investment Total</i>	<u>\$ 677.5</u>	<u>100.0%</u>	<u>2.81%</u>

** Market Values represent September 30, 1998, values as reported by the investment managers adjusted for allocations and distributions.

Numbers may not add due to rounding.

Largest Assets Held

Presented in the tables below are the largest domestic and international equity holdings and largest fixed income holdings as of December 31, 1998. The tables do not include the shares of these companies that SERS may hold indirectly through its ownership of passively owned index funds since SERS does not own the stocks but shares of the underlying collective trust fund.

As of December 31, 1998, SERS held shares in the following index funds:

Holding	Market Value
Barclays Global Investors Equity Index P (S&P 500)	\$5,149,244,394
Barclays Global Investors Tactical Asset Allocation Fund (90% S&P 500 / 10% Lehman Bond at December 31, 1998)	1,291,186,167
Barclays Global Investors Europe Index	608,528,977

**Top 10 Domestic and International Equity holdings
in actively managed accounts at December 31, 1998:**

Domestic Equity		International Equity	
Holding	Market Value	Holding	Market Value
Microsoft	\$86,527,131	Telefonica SA	\$38,058,906
Pfizer	86,450,000	Nokia Corp	35,324,319
MCI Worldcom	72,007,941	Suez Lyonnaise	31,756,337
Tyco International	64,486,012	Vodafone	31,365,920
Schering Plough	57,504,200	Novartis	30,932,955
Home Depot	54,707,744	National Westminster Bank	29,827,709
Warner Lambert	44,458,369	AXA SA	29,700,821
Safeway	40,352,813	Danone	27,787,516
Lowes	38,405,981	Banque Nationale De Paris	26,329,268
Cisco System	38,159,859	Mannesmann AG	24,949,357

Top 10 Fixed Income holdings in actively managed accounts at December 31, 1998:

Holding	Market Value
Government of France Bonds, 5.25%, 4/25/2008	\$106,675,455
US Treasury Bond Stripped Principal, 8.75%, 8/15/2020	101,511,334
US Treasury Bonds, 6.75%, 8/15/2026	73,588,901
Federal Republic of Germany Bonds, 8.375%, 5/21/2001	71,444,034
Federal Republic of Germany Bonds, 5.25%, 1/4/2008	69,451,655
United Kingdom Treasury, 8.5%, 7/16/2007	65,693,232
Federal Republic of Germany Bonds, 6.5%, 7/4/2027	52,143,814
Japan Bonds, 2.9%, 12/20/2005	48,110,457
Federal Republic of Germany Bonds, 5.0%, 11/12/2002	42,476,915
US Treasury Inflation Index Notes, 3.375%, 1/15/2007	42,326,389

Schedule of Fees and Commissions

Schedule of Broker Commissions Year Ended December 31, 1998

<u>BROKER</u>	<u>COMMISSIONS</u>	<u>BROKER</u>	<u>COMMISSIONS</u>
MERRILL LYNCH	\$2,000,218	BROADCOURT CAPITAL CORP	\$116,101
DEUTSCHE BANK	1,257,521	JONES & ASSOC	113,463
GOLDMAN SACHS	1,159,355	BROWN (ALEX) & SONS INC	111,594
MORGAN STANLEY	942,352	SGS SECURITIES	106,496
WARBURG S G & COMPANY INC	878,050	CARNEGIE INTL	100,161
C S FIRST BOSTON CORP	757,807	SCHRODER SECURITIES	94,976
SALOMON BROS	581,439	DAIWA SECURITIES	93,255
SBC WARBURG	564,623	NATIONSBANC MONTGOMERY	79,515
ALPHA MANAGEMENT	529,329	ENSKILDA SECURITIES	76,060
LEHMAN BROS	498,819	NOMURA SECURITIES	73,774
INSTINET CORP	490,015	WEEDEN & CO	73,659
INVESTMENT TECHNOLOGY	463,383	ORMES CAPITA	73,012
LYNCH JONES & RYAN	410,970	JAMES CAPEL	69,872
ABN AMRO	404,999	CIBC	68,397
BEAR STEARNS	385,611	DAVY STOCKBROKERS	62,758
KLEINWORT BENSON SECURITIES	343,269	ALFRED BERG	62,619
ROCHDALE SECURITIES	330,209	BANCO SANTANDER	61,410
LEWCO SECURITIES	325,541	DRESDNER KLEINWORT	58,642
CREDIT LYONNAIS	321,649	GREEN STREET	55,372
J P MORGAN	275,885	JANNEY MONTGOMERY	55,122
JARDINE FLEMING	243,526	QUAKER SECURITIES	55,057
SMITH BARNEY INC	241,886	ABG SECURITIES	54,547
CANTOR FITZGERALD	218,887	NATWEST CAPITAL	54,309
FOX PITT KELTON	216,418	FURMAN SELZ MAGER DIETZ &	54,108
HSBC	214,396	J B WERE SON	54,022
DONALDSON LUFKIN & JENRETTE	213,100	SANTANDER SECURITIES	53,443
JP MORGAN	203,940	BERNSTEIN SANFORD	52,518
ING BARING	200,658	UBS SECURITIES	50,887
EXANE	186,615	COLLINS STEWART	48,532
ROBERT FLEMING SECURITIES	167,897	HOARE GOVETT	48,227
CS FIRST BOSTON CORP	159,342	EUROPE COMPANY	45,827
GK GOH SECURITIES	152,949	FIDELITY CAPITAL MARKETS	45,271
W I CARR	150,823	PARIBAS	43,425
JEFFRIES & CO	136,586	SOCGEN CROSBY	42,536
MORGAN GRENFELL	129,823	SEIDLER COMPANIES	40,602
PAINE WEBBER INC	126,107	CARR WI	39,171
PRUDENTIAL SECURITIES	122,783	KAY HIAN	38,521
CAZENOVE & CO	122,309	NEUBERGER & BERMAN	36,453
CHEVREUX DE VIRIEU	121,477	OKASAN INTERNATIONAL	35,736
EWING CAPITAL	119,643	BANCA COMMERCIALE	35,581

(Continued)

Schedule of Broker Commissions (continued)
Year Ended December 31, 1998

<u>BROKER</u>	<u>COMMISSIONS</u>	<u>BROKER</u>	<u>COMMISSIONS</u>
PICTET	\$34,572	FERRI PARIS	\$17,005
WILSHIRE ASSOCIATES	31,329	HARGREAVE HALE	16,786
BANCAMERICA	30,205	BNY ESI & CO	16,698
SWISS BANK	29,316	BRIDGE TRADING	16,056
BANKERS TRUST	28,596	LEGG MASON WOOD WALKER	15,589
ASEORES	28,237	KEMPEN	15,360
ROBERT W BAIRD & CO	27,238	FIRST ALBANY CORP	15,104
EVEREN SECURITIES	26,203	PETERCAM	15,053
SOCIETE GENERALE	25,632	CITATION GROUP	14,772
CHAPMAN COMPANY	25,386	BANK JULIUS BAER	14,655
CHARLES SCHWAB	25,149	J CHEUVREAUX	13,937
INVEMED	25,050	EXECUTION SERVICES	13,800
KIM ENG SECURITIES	24,951	OPPENHEIM	13,687
EVEREN SECURITIES	24,678	BANK INSINGER DE BEAU	13,542
BSN	24,584	SVENSKA HANDELSBANKEN	13,323
AUTRANET, INC	24,350	DRESDNER KLEINWORT	12,999
HARTLEY POYNTON	23,923	FRIEDMAN BILLINGS &	12,673
DEVLETOGLOU	23,903	MEESPIERSON	12,355
MAY DAVIS	23,856	FACTSET DATA SYSTEMS	11,914
WEEDEN & CO	23,820	BCI LONDON	11,863
CONNING & CO	23,640	OCBC SECURITIES	11,842
OPPENHEIMER & CO	22,933	PRYOR MCCLENDON	11,808
CREDIT SUISSE	22,604	PANMURE GORDON	11,729
ESI SECURITIES	22,539	RAYMOND JAMES	11,488
CAPITAL INSTITUTIONAL	22,157	CREDIT ANSTALT	11,336
STANDARD & POORS	21,732	MONTGOMERY SECURITIES	11,204
WARBURG DILLON REED	21,220	ASIA EQUITY	11,195
COUNTY NATWEST	21,215	ALLEN & CO	11,025
OTHER	21,190	ZANNEX SECURITIES	10,933
WILLIAMS CAPITAL	20,938	DEN NORSKE	10,900
FOX-PITT KELTON	20,892	WAKO SECURITIES	10,869
RABO SECURITIES	20,425	J STREICHER	10,730
IPS BROKERAGE	20,034	SUTHERLANDS	10,585
CASPIAN SECURITIES	19,739	S G COWEN SECURITIES	10,317
JAVELIN SECS	19,113	NELLSON COBBOLD LTD	10,307
WILLIAM BLAIR & CO	18,939	VARDEPAPPER	10,257
SIGMA SECURITIES	18,815	MORGAN KEEGAN	10,224
CROSBY SECURITIES	18,809	VARDEPAPPER STOCKHOLM	10,194
MAXUS CORP	18,635	DANAREKSA SECURITIES	10,118
WESTMINSTER RESEARCH	17,845	Other Brokers (283)	706,049
DEMIRBANK	17,682		
MORGAN GUARANTY	17,224	Total Commissions	\$21,084,819

Investment Summary

SERS's assets are administered by the SERS Board of Trustees (Board), which has adopted an Investment Policy that incorporates the provisions of the State Employees' Retirement Code governing investment of SERS's assets. The policy provides investment objectives and guidelines. An Investment Plan is reviewed and updated annually for strategic asset allocation purposes and for diversification needs within each asset class. SERS's assets had a market value of approximately \$24,128.3 million on December 31, 1998.^{1/}

SERS Asset Allocation (\$ in millions)

Asset Class	Market Value		1998 Target Allocation
	\$	%	
U.S. Stocks	\$10,113.2	41.9%	40.0%
International Stocks	4,247.0	17.6%	20.0%
Fixed Income	5,216.5	21.7%	23.0%
Cash	155.2	0.6%	0.0%
Tactical Asset Allocation	1,291.2	5.3%	5.0%
Real Estate	2,000.9	8.3%	8.5%
Venture Capital	426.8	1.8%	1.3%
Alternative Investments	677.5	2.8%	2.2%
Total	\$24,128.3	100.0%	100.0%

Investment Advisors: As listed below, SERS had 99 external investment advisory firms managing portfolios, with 41 portfolios in the public markets segment and 72 portfolios in private equity and real estate. There were 14 firms managing assets across public markets, real estate and private equity mandates:

- 15 U.S. Stock investment advisors
- 12 International Stock investment advisors
- 2 Currency Overlay investment advisors
- 10 Fixed Income investment advisors
- 1 Cash investment advisor
- 1 Tactical Asset Allocation investment advisor
- 21 Real Estate investment advisors
- 24 Venture Capital limited partnership managing general partners
- 27 Alternative Investment limited partnership managing general partners

In addition, the Board approved the hiring of three advisors in U.S. Stocks, two advisors in Fixed Income, three Alternative Investment partnerships and one Venture Capital partnership.

Investment Portfolios: SERS had 163 investment portfolios/accounts as follows, with 47 managing public market investments and 116 covering private markets:

- 19 U.S. Stock portfolios
- 13 International Stock portfolios
- 2 Currency Overlay portfolios
- 11 Fixed Income portfolios
- 1 Cash portfolio
- 1 Tactical Asset Allocation portfolio
- 33 Real Estate portfolios
- 38 Venture Capital limited partnership interests
- 45 Alternative Investment limited partnership interests

Additional Board appointments included four U.S. stock portfolios, two Fixed Income portfolios, three Real Estate partnerships, two Venture Capital partnerships, and six Alternative Investment funds.

^{1/} Refer to the footnote at the end of the Investment Summary for a technical explanation of values.

Summary of U.S. Stock Investments

U.S. and International Stocks comprise the Stock asset class. Stock is one of eight major asset classes SERS uses to diversify investment of the Fund. SERS's investment plan diversifies Stock investments and balances Stock management styles. SERS contracts with external investment advisors to manage portfolios.

Policy: Stock investments are employed by the Fund primarily because their expected large return premiums versus inflation will, if realized, help preserve and enhance the real value of the Fund over long periods of time. The Stock asset class is to be managed on a total return basis. SERS's long term investment objective in the U.S. Stock component of the Stock asset class is to achieve a risk adjusted total return, net of fees, that exceeds the total return of the Wilshire 5000 Index.* Stock investments shall emphasize, but are not be limited to, publicly traded securities that provide SERS with an equity interest in private sector concerns (e.g., common stock, preferred stock, convertible preferred stock, convertible bonds, etc.). SERS's 1998 Investment Plan targeted an eventual allocation of 34% of assets to U.S. Stocks. It targeted the investment of 80% of U.S. Stocks in large/medium capitalization stocks and 20% in medium/small capitalization stocks, and also provided for a market weight in value and growth investment styles. The 1998 plan targeted 50% of U.S. Stocks to be indexed.

Market Value: U.S. Stocks had a \$10,113.2 million market value, 41.9% of the total Fund's \$24,128.3 million market value, on December 31, 1998.

Investment Advisors: SERS had contracts with 15 external investment advisors to manage U.S. Stock portfolios.

Investment Portfolios: SERS had 19 U.S. Stock portfolios managed by the 15 investment advisors.

Type of Investment Portfolios: As of December 31, 1998, 80.2% of SERS's U.S. Stock allocation was in large/medium capitalization stock strategies and 19.8% was in medium/small capitalization stock strategies. The portfolios within the U.S. Stock area can be classified by investment style: value at 10.2%; growth at 16.9%; and core at 72.9%. SERS had 17 actively managed portfolios (46.9% of U.S. Stocks) and two passively managed index portfolios (53.1% of U.S. Stocks). The active managers search out superior investment opportunities, while the passively managed portfolios provide broad core diversification and are designed to provide market performance at a low cost.

** Meeting January 27, 1999, the SERS Board adopted the Russell 3000 Index as the benchmark for the U.S. Stock asset class, replacing the Wilshire 5000 Index.*

<i>U.S. Stock</i> Investment Advisor	Investment Style	*Market Value of Portfolio as of 12/31/98 (\$ in millions)
1. Barclays Global Investors	S&P 500 – index	\$5,149.2
Extended Equity Market Fund	Wilshire 4500 – index	220.3
2. AXA Rosenberg Investment Management	Russell 2500, industry and risk factors neutral	211.5
3. Alliance Capital Management L.P.	large cap growth stocks	376.0
4. Dietche & Field Advisors	small cap relative value stocks	114.8
5. Emerald Advisors	PA stocks	72.7
6. Fidelity Management Trust	S&P 500, risk controlled	200.0
7. Iridian Asset Management	medium cap change catalyst stocks	418.1
8. J.P. Morgan Investment	S&P 500, risk controlled	223.0
9. Loomis, Sayles & Company (D.C.)	large/medium cap relative value stocks	163.6
10. MacKay Shields Financial	large/medium cap value stocks	146.6
11. Mellon Equity Associates - PA	PA stocks	92.4
Mellon Equity Associates - Special Equity	Wilshire 4500, industry and risk factors neutral	669.5
12. Montag & Caldwell	large cap growth stocks	329.8
13. Provident Investment Counsel (PIC)	large/medium cap aggressive growth stocks	875.9
PIC Stellar Fund	small cap growth stocks	100.5
14. Trinity Investment Management	large medium cap value stocks, industry neutral	624.5
Trinity Investment Management	small cap value stocks, industry neutral	97.8
15. Zevenbergen Capital	large/medium cap growth stocks	27.2
Total		<u>\$10,113.2</u>

** Includes stocks and cash the manager had available for investment.*

Numbers may not add due to rounding.

Summary of International Stock Investments

International and U.S. Stocks comprise the Stock asset class. Stock is one of eight major asset classes SERS uses to diversify investment of the Fund. SERS's Investment Plan diversifies Stock investments and balances Stock management styles. SERS contracts with external investment advisors to manage portfolios.

Policy: Stock investments are employed by the Fund primarily because their expected large return premiums versus inflation will, if realized, help preserve and enhance the real value of the Fund over long periods of time. The Stock asset class is to be managed on a total return basis. SERS's long term investment objective in the International Stock component of the Stock asset class is to achieve a risk-adjusted total return, net of fees, that exceeds the total return of the SERS International Stock Custom Index. SERS's 1998 Investment Plan targeted an eventual allocation of 20% of assets to International Stocks. It targeted the investment of 80% of International Stocks to large capitalization stock strategies and 20% to medium/small capitalization stock strategies.

Market Value: International Stocks had a \$4,272.4 million market value, 17.7% of the total Fund's \$24,128.3 million market value, on December 31, 1998. The fair value of forward exchange contracts in the currency overlay program amounted to (\$25.4) million, (0.1%) of the total Fund's December 31, 1998, market value.

Investment Advisors: SERS had contracts with 12 external investment advisors to manage International Stock portfolios. In addition, SERS had contracts with two external advisors to manage a Currency Overlay program.

Investment Portfolios: SERS had 13 stock portfolios managed by the 12 investment advisors in the International Stock area and two portfolios for the Currency Overlay program.

Type of Investment Portfolios: As of December 31, 1998, 81.9% of SERS's International Stock allocation was in large capitalization stock strategies, and 18.1% was in medium/small capitalization stock strategies. SERS had 11 actively managed international portfolios and two index portfolios.

<i>International Stock Investment Advisor</i>	<i>Investment Style</i>	<i>*Market Value of Portfolio as of 12/31/98 (\$ in millions)</i>
1. Barclays Global Investors Europe Funds	Europe – index	\$ 608.5
Australia and New Zealand Funds	Australia and New Zealand – index	33.2
2. Credit Suisse Asset Management	international growth stocks – core	687.4
3. GAM International Management	Pacific Basin ex Japan stocks	95.6
4. Marathon Asset Management	Europe medium stocks, contrarian industries	252.8
5. Mercury Asset Management International	international medium/small cap growth stocks	307.2
6. Miller Anderson & Sherrerd	international value stocks – core	618.1
7. J.P. Morgan Investment Management	Japan stocks, sector neutral	249.9
8. Morgan Stanley Dean Witter Investment Management	Asia ex Japan stocks	64.2
9. Pictet International Management	75% international small cap stocks / 25% emerging markets	272.8
10. Scottish Widows Investment Management	Europe stocks	295.4
11. Seligman Henderson Co.	international medium/small cap, UK growth and other countries value stocks	195.0
12. Templeton Investment Counsel	international value stocks – core	592.4
	Total International	\$4,272.4
1. Pareto Partners	currency overlay	\$ (2.5)
2. Record Treasury	currency overlay	(22.9)
	Total Currency Overlay	\$ (25.4)
	Total International and Currency Overlay	\$4,247.0

** Includes stocks and cash that the manager had available for investment.*

Numbers may not add due to rounding.

Summary of Fixed Income Investments

Fixed Income is one of eight major asset classes SERS uses to diversify investment of the Fund. The SERS Investment Plan diversifies Fixed Income investments and balances Fixed Income management styles. It is SERS's practice to contract with external investment advisors to manage portfolios.

Policy: Fixed Income investments are employed by the Fund primarily because of their ability to serve as a hedge against dis-inflation and/or deflation, their general ability to produce current income in the form of periodic interest payments, and because such investments help diversify the overall Fund. The Fixed Income asset class is to be managed on a total return basis. In the Fixed Income asset class, SERS's long term investment objective is to achieve a risk-adjusted total return, net of fees, that exceeds the total return of the SERS Fixed Income Custom Index. SERS's 1998 Investment Plan targeted an eventual allocation of 23% of assets to the Fixed Income asset class. Of this amount, 75% was targeted to core strategies and 25% to specialty strategies. The specialty strategies include whole loan mortgages, high yield/special credits, commercial mortgage backed securities, and private placements.

Market Value: Fixed Income had a \$5,216.5 million market value, 21.7% of the total Fund's \$24,128.3 million market value, on December 31, 1998.

Investment Advisors: SERS had contracts with 10 external investment advisors to manage portfolios within the Fixed Income asset class as of December 31, 1998.

Investment Portfolios: SERS had a total of 11 portfolios within the Fixed Income asset class.

Type of Investment Portfolios: The Fixed Income asset class is divided into core and specialty segments. Core portfolios utilize a broad array of fixed income securities, while specialty portfolios focus on well-defined sectors and opportunistic strategies within the fixed income market.

Core: SERS had five actively managed core bond portfolios with a market value of \$3,226.3 million and one passively managed core bond portfolio with a market value of \$691.5 million. The combination of core portfolios represented 75.1% of the asset class. The core portfolio segment of the asset class includes exposure to both international and global fixed income.

Specialty: SERS had one whole loan mortgage portfolio with a market value of \$244.7 million, three high yield/special credits/commercial mortgage backed securities portfolios with a market value of \$868.6 million and one private placement portfolios with a market value of \$185.4 million.

<i>Fixed Income</i> Investment Advisor	Investment Style	*Market Value of Portfolio as of 12/31/98 (\$ in millions)
Core		
1. Fischer Francis Trees & Watts	active international	\$ 584.9
2. Mellon Bond Associates	domestic – index	691.5
3. Miller, Anderson & Sherrerd	active domestic	964.5
Miller, Anderson & Sherrerd	active global fixed income	905.1
4. J.P. Morgan Investment	active domestic fixed income	741.4
5. Smith Graham & Co.	active domestic fixed income	30.4
Specialty		
6. John Hancock Mutual Life	private placements	185.4
7. W. R. Huff Asset Management	high yield bonds	767.5
8. Legg Mason Real Estate Advisors	residential and commercial mortgages	244.7
9. Trust Company of the West	special credits	0.5
10. Fidelity Management Trust	commercial mortgage backed securities	100.6
Total		<u>\$5,216.5</u>

** Includes securities and cash that the manager had available for investment.*

Numbers may not add due to rounding.

Summary of Cash Investments

Cash is one of eight major asset classes SERS uses for investments of the Fund. The SERS Investment Plan calls for minimizing Cash balances while meeting Cash flow requirements.

Policy: Cash investments are employed by the Fund to provide for SERS's liquidity needs and to accumulate funds for future permanent investment. The Cash asset class is to be managed on a total return basis, with the exception that temporary investments may alternatively be evaluated on a yield-to-maturity basis given their extremely short maturities. In the Cash asset class, SERS's long-term investment objectives are to achieve a risk-adjusted total return, net of fees, that exceeds the total return on 90-day U.S. Treasury Bills. SERS's 1998 Investment Plan targeted an eventual allocation of 0% of assets to the Cash asset class.

Market Value: Cash had a \$155.2 million market value, 0.6% of the total Fund's \$24,128.3 million market value, on December 31, 1998.

Investment Advisors: In accordance with SERS's 1998 Investment Plan, SERS utilizes the Pennsylvania State Treasury Department to manage its cash accounts.

Investment Portfolios: SERS's Cash portfolio is managed by the Pennsylvania State Treasury Department.

Type of Investment Portfolios: SERS's Cash asset class currently employs a money market short-term investment strategy; the portfolio is managed by State Treasury; the portfolio also manages the uninvested cash balances held by other SERS investment advisors in other asset classes. In the aggregate, State Treasury managed \$729.9 million on behalf of SERS and SERS's external investment advisors as of December 31, 1998.

Summary of Tactical Asset Allocation Investments

Tactical Asset Allocation (TAA) is one of eight major asset classes SERS uses to diversify investment of the Fund. It is SERS's practice to contract with external investment advisors to manage portfolios. Currently, the TAA asset class contains one investment strategy - the Enhanced US 70/30 Tactical Asset Allocation Fund (Enhanced 70/30 TAA). The Enhanced 70/30 TAA strategy shifts assets among stocks, bonds and cash. SERS contracts with an external investment advisor, Barclays Global Investors (Barclays), to manage the portfolio.

Policy: SERS's 1998 Investment Plan targeted an eventual allocation of 5% of assets to the TAA asset class.

Market Value: SERS's investment in the Enhanced 70/30 TAA Fund had a \$1,291.2 million market value, 5.3% of the total Fund's \$24,128.3 million market value, on December 31, 1998.

Investment Advisors: SERS had a contract with one external investment advisor to manage a TAA portfolio as of December 31, 1998.

Investment Portfolios: SERS had one TAA portfolio managed by the one investment advisor.

Type of Investment Portfolio: The Enhanced 70/30 TAA Fund is designed to offer an efficient, low cost means of seeking above-market returns from a portfolio diversified among the U.S. stock, fixed income and cash markets. The Fund invests in three of Barclays' collective funds (Equity Index Fund, Long-Term Fixed Income Fund and the Short-Term Asset Allocation Cash Fund). Proprietary technology is used to establish the optimal asset mix among these funds and to adjust the mix of these funds. The mix will vary as economic and capital market conditions change. Under equilibrium conditions, the Enhanced 70/30 TAA Fund will have 70% of assets invested in the Equity Index Fund, 30% of assets invested in the Long-Term Fixed Income Fund and 0% in the Short-Term Asset Allocation Cash Fund. As of December 31, 1998, the actual asset mix of the Enhanced 70/30 TAA Fund was 90% stock, 10% bonds and 0% cash.

Summary of Real Estate Investments

Equity Real Estate is one of eight major asset classes SERS uses to diversify investment of the Fund. SERS's Investment Plan diversifies Real Estate investments and balances Real Estate management styles. In accordance with the plan, SERS contracts with external investment advisors to manage portfolios.

Policy: Equity Real Estate investments are generally long-term, illiquid investments that, due to their high correlation with inflation, provide an inflation hedge and, due to their low correlation with stocks and bonds, provide diversification within the total portfolio. It is expected that the long-term total return (income and appreciation) for real estate will fall between those of stocks and bonds. The Equity Real Estate asset class is to be managed on a total return basis. In the Equity Real Estate asset class, SERS's long term investment objective is to achieve a risk-adjusted total return, net of fees, that exceeds the total return of the NCREIF Index. SERS's 1998 Investment Plan targeted an eventual allocation of 10% of assets to the Equity Real Estate asset class. Investments are made through commingled fund investments, limited partnerships, REITs and separate account portfolios where SERS owns the properties directly or with other co-investors. SERS's Equity Real Estate portfolio guidelines provide for diversification by:

- Transaction structure;
- Property type;
- Geographic location; and
- Development phase.

Market Value: Real Estate had an estimated \$2,000.9 million market value, approximately 8.3% of the total Fund's December 31, 1998, market value. This market value represents September 30, 1998, actual numbers adjusted for cash flows that occurred in the fourth quarter of 1998.

Investment Advisors: SERS had contracts with 21 external investment advisors to manage Real Estate portfolios as of December 31, 1998.

Investment Portfolios: SERS had investments in 33 Real Estate portfolios managed by the 21 investment advisors.

Type of Investment Portfolios: As of September 30, 1998, the composition of the Real Estate portfolio was:
93% equity ownership, 7% equity-oriented mortgages;
33% pooled funds, 68% separate accounts;
30% office, 9% industrial, 21% retail, 15% residential, 13% hotel/motel, 12% other;
18.6% Pennsylvania, 24.4% East excl. PA, 23% West, 21% South, 13% Midwest, and
25% of the market value of the separate accounts was invested in 22 investments located in Pennsylvania.

<i>Real Estate Investment Advisor</i>	SERS Initial Funding	Property Type	Transaction Structure	Market Value of Portfolio as of 9/30/98 (\$ in millions)
1. Allegis:				
CERESA I	06/30/83	Office, industrial	equity ownership	\$ 2.9
PMSA	09/30/83	Diversified	equity mortgages	51.4
RESA	06/30/84	Diversified	equity ownership	47.4
Apartment Fund	12/31/86	Residential	equity ownership	0.0
2. LaSalle Partners:				
Separate Account	10/1/93	Diversified	equity ownership	149.7
Alex Brown Profile Fund	12/31/84	Diversified	equity ownership	0.2
3. Apollo – AREF III	06/26/98	Opportunistic	equity and debt	26.5
4. AEW CIIF-II	08/08/88	Industrial, other	equity ownership	12.1
5. Berwind – BPG Fund	04/20/98	Opportunistic	equity and debt	6.8
6. Blackstone - BREP II	02/26/97	Opportunistic	equity and debt	43.8
7. CRA Securities	01/31/96	REITs	public securities	222.2
8. Forest Investment Assoc.	10/30/92	Timber	equity ownership	118.8
9. Hancock Apartment Fund	09/30/86	Residential	equity ownership	5.8
10. Heitman Capital Mgmt:				
Separate account	12/28/87	Diversified	equity ownership	428.0
California Land Venture	12/07/89	Land	equity ownership	1.2
JMB Group Trust III	12/31/84	Office, retail	equity ownership	41.1
11. Legg Mason Real Estate Adv.	10/01/93	PA diversified	equity ownership	144.4
12. Lowe Enterprises	10/01/93	Diversified	equity ownership	245.8
13. Lubert-Adler	10/30/98	Diversified	equity and debt	0.0
14. Oxford Development	01/09/97	Industrial	equity ownership	25.6
15. Prudential Senior Housing	12/22/98	Senior housing	equity and debt	0.0
16. SSR Realty Advisors:				
MIAF	09/05/89	Residential	equity ownership	15.2
MIAF II	12/07/92	Residential	equity ownership	17.9
17. Sentinel Corp.	07/31/84	Diversified	equity ownership	49.2
18. Starwood - SOFI IV	03/24/97	Opportunistic	equity and debt	51.1
19. Oaktree Capital Management:				
TCW Fund VI	04/20/94	Opportunistic	equity and debt	39.6
OCM Opportunity Fund	05/09/96	Opportunistic	equity and debt	55.8
OCM Opportunity Fund II	12/15/98	Opportunistic	equity and debt	0.0
20. Westbrook Partners:				
WREF II	06/16/97	Opportunistic	equity and debt	55.4
WREF III	9/01/98	Opportunistic	equity and debt	0.1
21. Goldman Sachs:				
Whitehall V & VI	04/20/94	Opportunistic	equity and debt	43.0
Whitehall V-S & VI-S	12/11/95	Opportunistic	equity and debt	9.9
Whitehall VII & VIII	05/28/96	Opportunistic	equity and debt	27.3
September 30, 1998, Total				\$1,938.2
4 th Quarter 1998 Net Cash Flow Adjustments				62.7
December 31, 1998, Total				\$2,000.9

Numbers may not add due to rounding.

Summary of Private Equity Investments

Private Equity, composed of Venture Capital and Alternative Investments, comprises two of the eight major asset classes SERS uses to diversify investment of the Fund. In these areas, SERS primarily invests in limited partnerships. The partnerships are established by individual management groups selected by SERS for the purpose of investing in and managing private equity and non-marketable subordinated debt positions on behalf of SERS and other limited partners. Asset class explanations are as follows:

Venture Capital is the financing of young, rapidly growing companies that lack access to public equity or debt-oriented institutional funding. Venture Capital strategies are typically classified as follows:

Seed Stage: This form of venture capital funds companies that are still in the conceptual phase, i.e., a product and market are identified, but the company itself has yet to be formed. The seed investment is generally less than \$1 million and is used to finance development of the concept or business plan.

Early Stage: This investment phase emphasizes companies that have been formed, but revenues have not yet been realized. The product has been developed and may have been shipped to a friendly user for testing. Management positions have been filled and the team is in place.

Late Stage: At this stage, venture capitalists fund companies with proven revenues that are in the process of expanding. Typically, these companies, if substantially profitable, are nearing a strategic sale to another company or an initial public offering. In other cases, a late stage or "bridge" financing may be used to supply needed capital for operations or expansion.

Alternative Investments consists of all other forms of private equity that exclude conventional venture capital investing as described above. Primarily, these partnerships invest in the private equity and subordinated debt of established companies. Alternative Investments, however, can also include other forms of non-traditional investing such as investments in oil and gas interests, hedge funds, etc. Distinct strategies currently used by SERS are as follows:

Leveraged buyout (LBO) financing enables companies to be acquired through the use of borrowed funds. Typically, the assets of target companies serve as collateral for loans originated in the transaction. The loans are subsequently repaid from the acquired company's cash flows. SERS invests as an equity partner in LBO partnerships. As such, SERS participates in potential profits resulting when LBO exits occur, typically reaping higher rewards than company debt holders.

Distressed debt investing involves the identification of opportunities in the deleveraging of debt-laden companies. Investments are usually made in successful companies, which, over time, have accumulated heavy debt loads. Distressed debt investors assist companies in reducing debt and even avoiding bankruptcy by providing patient capital. The new capital carries renewed terms that usually include an equity stake in the restructured firm.

Secondary partnerships acquire interests in established buyout and private equity funds. Secondary investing can often be lucrative in two ways. 1) the partnerships are purchased at significant discounts to net asset value, and 2) the purchase frequently occurs as the acquired partnerships begin to realize profits, thereby reducing risk in the asset class.

Policy: SERS's long term investment objective for Private Equity is to achieve a risk-adjusted total return, net of fees, that exceeds market returns for similar types of private equity investments or benchmark return data furnished by SERS's Private Equity Consultant. SERS's 1998 Investment Plan states an annualized expected total return of 14%. In addition, the Plan targets an eventual allocation of 8% to Private Equity, which comprises an allocation of 2% to Venture Capital and 6% to Alternative Investments. The target threshold for Venture Capital is designated by statutory guidelines as stated in the following text:

Act 95, Section 4, became effective on June 29, 1984, specifying that SERS may invest up to 1% of the Fund's assets in venture capital by acquiring equity or debt and equity interests in a business that is expected to grow substantially in the future. Act 1991-23 became effective in 1991 and specified that SERS may invest up to 2% of the Fund in venture capital. Furthermore, Act 1994-29 became effective in 1994 and enables SERS to invest according to "prudent person" standards, and further specifies that an investment in venture capital by SERS may be made only if the investment is reasonably likely to enhance the general welfare of the Commonwealth and its citizens.

Market Value: The Private Equity asset class total market value stood at \$1,104.3 million as of September 30, 1998, representing 4.6% of the Fund. Market values and fund percentages were as follows:

	Total Commitments (\$ in millions)	Market Value (\$ in millions)	Percent of Total Fund
Venture Capital	\$739	\$426.8	1.8%
Alternative Investments	\$1,483	\$677.5	2.8%
Total Private Equity	\$2,222	\$1,104.3	4.6%

Number of Limited Partnerships: As of September 30, 1998, SERS had made commitments to 83 Private Equity limited partnerships. Of these, 38 commitments were made to Venture Capital partnerships and 45 to Alternative Investments partnerships. (This excludes four partnerships—three Venture Capital and one Alternative Investment—that are now inactive.) As of December 31, 1998, SERS had paid in capital as a limited partner to all but two of those partnerships. Paid-in capital represents funds that have been drawn down by the General Partners and are readily available for investment. In addition, Board appointments during the fourth quarter of 1998 included one Venture Capital partnership and eight Alternative Investment partnerships, none of which had paid-in capital as of December 31, 1998.

Private Equity Investment Program

Venture Capital

SERS's Venture Capital program includes commitments to 38 Venture Capital limited partnerships. Fifteen of these partnerships are committed to invest in Pennsylvania-based companies as a part of their venture investment focus. These partnerships use their best efforts to make Venture Capital investments in companies either headquartered in Pennsylvania or in companies that provide employment for Pennsylvania citizens. Currently, Venture Capital investments are made in 44 companies located in Pennsylvania and 12 non-Pennsylvania companies that employ in-state residents. According to a study conducted by Coopers & Lybrand L.L.P. for calendar year 1998, Pennsylvania ranked fourth in the nation in the number of venture transactions financed and ninth in terms of dollars applied to venture financing (i.e., \$335.0 million was invested), a 1% decrease from the prior year.

A major portfolio objective of the Venture Capital program is to diversify company investments across industries. As of September 30, 1998, the Venture Capital program was invested across industry categories as follows:

28.4% Healthcare/Biotech	3.6% Hardware	1.3% Energy
24.9% Communications	3.6% Manufacturing	1.1% Environmental
16.1% Software/Hardware	2.3% Financial Services	3.7% Other
13.3% Consumer/Retail/Services	1.7% Electronics	

The Venture Capital program's financing stage focus varies among the 38 partnerships. The partnerships focus on specific phases in company life cycles. SERS's investments are thereby grouped to reflect this exposure and are labeled as follows: seed stage, early stage, and later stage financing.

Alternative Investments

The Alternative Investments program has commitments to 24 buyout-oriented partnerships, which are well diversified by size of investment and geographic focus. Non-hostile acquisitions are pursued. Most transactions are negotiated (i.e., non-auctioned) and are completed with present management in place. SERS's seven non-U.S. private equity investments are comprised of companies based in the U.K. and Europe. The partnerships focus on the U.K., France, Germany, and German-speaking countries. All seven funds plan to take advantage of changes occurring within Europe, including the formation of the European Economic Community, the reunification of Germany and the dissolution of the former Soviet Union.

The international fund-of-funds category is comprised of partnerships specializing in late stage venture and buy-out investing. The partnerships are located throughout the world, with a geographic emphasis on developed countries. This fund offers SERS immediate and diversified exposure to limited partnerships internationally and provides guidance for SERS in forming its own core investment portfolio of non-U.S. private equity partnerships.

SERS has ownership interest in three partnerships specializing in distressed debt instruments. One of the partnerships deals in debt obligations of financially troubled companies; the distressed debt is ultimately converted into equity in order to produce an equity-oriented return. The partnership is national in focus. Similarly, the other investments, also in distressed debt, anticipate gains from the appreciation of the debt instrument itself and do not rely on converting the debt into an equity position.

SERS also has an interest in two partnerships that invest in secondary purchases. These partnerships have a national focus and specialize in secondary purchases of established buyout and venture capital holdings. The benefits of secondary purchases are two-fold: 1) the partnerships are normally acquired from motivated sellers at substantial discounts to net asset value, and 2) secondaries often provide early distribution of profits compared to initial investments made in new funds.

Venture Capital Committed, Drawn and Distributed

As of September 30, 1998

In the table below, the Capital Committed column represents the capital amount officially allocated to each partnership. Capital Drawn is that portion of SERS's capital commitments that was drawn by SERS's venture capitalist for investment in underlying companies. The Distributions column lists profits and original capital returned to SERS from each partnership.

Limited Partnership	Financing Stage Focus	SERS Initial Funding	Capital Committed (\$ in millions)	Capital Drawn (\$ in millions)	Distributions (\$ in millions)
1. Advent VII	Diversified	7/30/93	\$ 25.0	\$ 25.0	\$ 47.8
2. Advent VIII	Diversified	2/1/97	30.0	9.6	0.0
3. APA/Fostin	Diversified	9/30/87	20.0	20.0	59.3
4. P/A Fund I (APA/Fostin II)	Diversified	6/2/93	30.0	30.0	15.0
5. P/A Fund III	Diversified	4/1/97	100.0	37.1	0.0
6. Bachow III	Diversified	11/9/94	25.0	25.0	2.1
7. CEO Ventures II	Diversified	7/14/89	8.0	7.5	2.3
8. Edison Ventures III	Diversified	3/1/94	25.0	25.0	7.6
9. Fairview Capital	Minority	9/28/94	10.0	6.0	2.0
10. Fairview Capital II	Minority	3/1/98	10.0	0.5	0.0
11. Fostin Capital	Diversified	11/25/85	10.0	10.0	9.4
12. Fostin Capital II	Diversified	10/5/89	8.0	7.5	2.6
13. Grotech PA III	Diversified	6/29/90	3.0	3.0	1.4
14. Grotech IV	Diversified	11/1/93	25.0	23.7	7.9
15. Grotech V	Diversified	9/18/98	25.0	2.1	0.0
16. Halpern Denny II	Early Stage	4/28/98	25.0	7.4	0.0
17. Healthcare Ventures III	Diversified	7/9/92	15.0	15.0	12.6
18. Healthcare Ventures V	Diversified	10/17/97	25.0	15.0	0.0
19. Keystone IV	Middle/Later	7/21/93	15.0	14.8	6.6
20. Keystone V	Middle/Later	12/29/97	25.0	7.6	0.0
21. New Enterprise Assoc. VI	Early/Later	3/2/94	25.0	25.0	16.7
22. New Enterprise Assoc. VII	Early/Later	4/1/97	30.0	22.5	0.8
23. NEPA Ventures	Seed/Early	8/29/85	2.0	2.0	6.0
24. NEPA Ventures II	Seed/Early	7/24/92	8.0	7.5	10.4
25. NEPA Ventures III (MidAtlantic)	Seed/Early	4/1/97	20.0	6.0	0.0
26. Point Ventures	Diversified	10/2/90	1.0	1.0	0.7
27. Polaris Ventures	Early Stage	6/4/96	15.0	10.6	2.3
28. Polaris Ventures II	Early Stage	9/8/98	25.0	1.3	0.0
29. Sprout Capital VII	Diversified	2/24/95	18.0	18.0	0.0
30. Summit Ventures IV	Later Stage	6/27/95	25.0	22.5	15.0
31. Summit Ventures V	Later Stage	3/9/98	37.5	6.6	0.0
32. Technology Leaders III	Diversified	1/3/97	15.0	7.5	4.4
33. Whitney Equity Partners III	Early Stage	3/12/98	20.0	2.2	0.0
34. Weston Presidio II	Diversified	11/27/95	20.0	10.5	1.4
35. Zero Stage II	Seed	4/30/87	2.0	2.0	0.3
Total*			\$722.5	\$437.0	\$234.6

Inactive Funds	Financing Stage Focus	SERS Initial Funding	Capital Committed (\$ in millions)	Capital Drawn (\$ in millions)	Distributions (\$ in millions)
1. PNC Ventures	Diversified	11/25/85	\$ 5.0	\$ 5.0	\$ 11.7
2. Pittsburgh Seed	Seed	1/13/87	2.0	2.0	1.0
3. TDH II	Diversified	11/25/85	9.0	8.5	15.5
Total*			\$16.0	\$15.5	\$28.2

* Numbers may not add due to rounding; figures do not include stock distribution account.

Alternative Investments Committed, Drawn and Distributed

As of September 30, 1998

In the table below, the Capital Committed column represents total dollars allocated from SERS to each limited partnership. Capital Drawn is the portion of SERS's capital commitments that was drawn by the General Partner to be placed with underlying portfolio companies. The Distributions column shows the value of original capital and profits returned to SERS.

	Limited Partnership	Financing Stage Focus	SERS Initial Funding	Capital Committed (\$ in millions)	Capital Drawn (\$ in millions)	Distributions (\$ in millions)
1.	APA Capital Risque III	France	11/29/90	\$ 5.0	\$ 5.1	\$ 3.8
2.	APA German Ventures	Germany	1/30/91	5.2	5.2	4.9
3.	APA German Ventures II	Germany	7/15/97	6.0	4.8	3.0
4.	APA U.K. Ventures VI	U.K.	12/9/97	9.0	3.4	0.0
5.	ABRY Broadcast Partners III	Telecom.	4/1/97	25.0	9.0	0.6
6.	Apollo IV	National	8/3/98	75.0	5.9	0.0
7.	BIII (DDJ Capital Mgt.)	Distressed	8/1/97	35.0	29.2	0.1
8.	Blackstone Capital II	Global	8/26/94	40.0	39.0	28.7
9.	Blackstone Capital III	Global	11/3/97	75.0	10.6	0.5
10.	Brentwood Buyout Fund	National	11/21/88	12.5	12.5	17.2
11.	Charterhouse Equity II	National	3/30/94	40.0	54.4	39.6
12.	Charterhouse Equity III	National	11/19/97	50.0	10.4	0.0
13.	Clayton, Dubilier & Rice V	Global	5/3/95	50.0	41.8	0.0
14.	Code, Hennessy & Simmons	Midwest Buyouts	9/28/89	10.0	9.7	26.8
15.	Code, Hennessy & Simmons II	Midwest Buyouts	7/12/94	20.0	18.4	20.7
16.	Code, Hennessy & Simmons III	Midwest Buyouts	8/1/97	40.0	17.6	0.0
17.	DLJ Merchant Banking Fund II	Global	5/22/97	75.0	32.4	5.7
18.	Frontenac VII	Midwest	8/1/97	40.0	12.0	0.0
19.	GTCR V	National	4/25/97	11.4	8.2	0.2
20.	GTCR VI	National	6/25/98	50.0	3.5	0.0
21.	Hancock Int'l Equity Partners II	Int'l Fund of Funds	4/1/97	25.0	11.4	2.0
22.	HarbourVest Int'l III	Int'l Fund of Funds	6/22/98	40.0	0.4	0.0
23.	Hellman & Friedman II	Global	1/7/92	25.0	25.2	28.3
24.	Hellman & Friedman III	Global	6/14/95	50.0	26.0	18.6
25.	Kelso V	National	1/26/94	44.5	47.6	17.7
26.	Kelso VI	National	7/7/98	75.0	0.9	0.0
27.	Landmark Equity Partners IV	Secondaries	2/28/95	14.9	12.0	10.3
28.	Landmark Equity Partners V	Secondaries	1/27/96	24.0	15.8	6.4
29.	Lexington Capital Partners II	Secondaries	4/1/98	40.0	3.5	0.0
30.	Media Communications III	Telecom. Buyouts	6/2/97	25.0	16.3	0.0
31.	Madison Dearborn I	Nat'l Buyouts	2/23/93	15.0	14.4	10.7
32.	Madison Dearborn II	Nat'l Buyouts	1/3/97	40.0	17.3	0.0
33.	Murphy & Fauver	Nat'l Buyouts	10/11/88	5.2	5.2	5.4
34.	OCM Opportunities Fund	Distressed Debt	1/12/96	24.0	24.0	0.0
35.	OCM Opportunities Fund II	Distressed Debt	2/5/98	40.0	22.0	0.0
36.	OCM Principal Opportunities	Private Equity	11/12/96	25.0	16.3	0.0
37.	RRZ Private Equity Fund	PA Buyouts	11/7/96	20.0	11.1	0.0
38.	Schroder Ventures UK III	UK	8/29/89	10.0	8.9	17.4
39.	Schroder Ventures UK IV	UK	4/2/96	15.0	7.0	1.3
40.	Schroder European Ventures	Pan-European	7/1/97	36.0	8.9	0.0
41.	Thomas H. Lee Equity Fund	Nat'l Buyouts	4/24/98	70.0	4.5	0.0
42.	TPG Partners II	Nat'l Situations	5/2/97	75.0	28.6	0.0
43.	TCW Special Credits V	Nat'l Situations	8/25/94	35.0	35.0	41.7
44.	Vestar Capital Partners	Nat'l Situations	5/7/97	25.0	10.6	0.0
Total*				\$1,472.7	\$706.0	\$311.6
Inactive Funds						
	Limited Partnership	Financing Stage Focus	SERS Initial Funding	Capital Committed (\$ in millions)	Capital Drawn (\$ in millions)	Distributions (\$ in millions)
45.	RRZ PA Fund #1	PA Buyouts	3/88	\$10.1	\$10.0	\$19.4
				\$10.1	\$10.0	\$19.4

* Numbers may not add due to rounding.

Footnote

Public Fund market values are as of December 31, 1998. Market values for Real Estate and Private Equity (Venture Capital and Alternative Investments) are based on September 30, 1998, valuations adjusted for any cash flows during the fourth quarter of 1998. PA investments for public market investments are valued as of December 31, 1998. PA investments in Real Estate are valued as of September 30, 1998. Private Equity investments for PA companies are valued semi-annually and reported as of September 30, 1998.

ACTUARIAL SECTION

Actuary's Certification

Hay/Huggins Company, Inc.
Actuarial and Benefits Consultants
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(202) 637-6600
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May 6, 1998

Mr. John Brosius
Executive Director
State Employees' Retirement System
30 North Third Street
P.O. Box 1147
Harrisburg, PA 17108-1147

Dear Mr. Brosius:

The purpose of this letter is to certify the actuarial adequacy of the contributions being made by the State of Pennsylvania and other participating agencies to the Pennsylvania State Employees' Retirement System (SERS), and to discuss the approach currently being taken toward meeting the financing objectives of the plan.

The funding objective of the plan is set forth in the SERS Code. The annual employer contribution is equal to the sum of the following:

- (1) The employer share of the normal cost.
- (2) The amortization of the unfunded liabilities as of December 31, 1990, over a 20-year period ending on June 30, 2011.
- (3) The amortization of changes in liability after 1990 over 20-year periods typically beginning with the July first following the effective date of the change. Changes include actuarial gains and losses and plan amendments.

The amortization payments increase 5% a year. The employer cost is determined as a percent of payroll, and the employer contributes that percent of the payroll of all covered members during each fiscal year. The employer cost is the total of (1) the employer normal cost percent and (2) the amortization payment on the outstanding liabilities. The employer contribution rate is based on the results of the actuarial valuation that is performed annually. The most recent valuation was performed as of December 31, 1997.

All costs and liabilities have been determined in conformance with generally accepted actuarial principles and procedures in accordance with the principles of practice prescribed by the Actuarial Standards Board. The calculations were performed on the basis of actuarial assumptions and methods that are internally consistent and reasonable (taking into account past experience under SERS and reasonable expectations) and which in combination represent the best estimate of anticipated experience under the plan.

The actuarial valuation is based on financial and participant data that is prepared by SERS staff. The data are reviewed by us for internal and year-to-year consistency as well as general reasonableness prior to use in the actuarial valuation. The data are also summarized and tabulated for the purpose of analyzing trends.

The actuarial valuation uses assumptions regarding future rates of investment return and rates of retirement, withdrawal, death, and disability among SERS members and their beneficiaries. The current set of assumptions used in the December 31, 1997, actuarial valuation was adopted by the Board and was based on actual experience of SERS during the years 1991 through 1995. The rate of inflation is not a direct assumption because the SERS plan does not include automatic cost of living adjustments. The implicit inflation assumption is 3.0% a year.

The actuarial value of assets is developed by recognizing the difference between the expected actuarial value of assets and the market value of assets over a five-year period. The expected actuarial value is last year's actuarial value brought forward to reflect actual contributions, benefit payments and expenses, and assumed investment income. Each year 20% of the difference between this expected value and the market value is recognized in determining the current actuarial value of assets with the remaining 80% to be recognized over the next four years.

Government Accounting Standards Board (GASB) Statement No. 25, *Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contributions Plans* establishes the range of funding methods for the Unfunded Actuarial Accrued Liability. The minimum funding can be over a 40-year period with payments increasing by the assumed increase in payroll. The SERS contributions increase at 5%, which is greater than the 3.3% salary growth assumption. However, the use of a 20-year amortization period results in payments that are greater than the minimum required under GASB #25.

Based upon the valuation results, it is our opinion that the Pennsylvania State Employees' Retirement System continues in sound condition in accordance with generally accepted actuarial principles and procedures.

Respectfully submitted,
Hay Group



By
Edwin C. Hustead, F.S.A.
Member American Academy of Actuaries
Enrolled Actuary No. 99-1499

HayGroup

Summary of Actuarial Assumptions and Methods

- ◆ The investment rate of return is 8.5% per year based on an underlying rate of inflation of 3.0% per year.
- ◆ The Fund uses a five-year smoothed market approach to value plan assets for actuarial purposes
- ◆ Actuarial methods are specified by statute. Actuarial assumptions are suggested by the plan's actuary and approved by the SERS Board of Trustees
- ◆ For current retirees, beneficiaries and survivors the plan uses the 1971 Group Annuity Mortality Table set back no years for males and six years for females. For current active employees, the plan uses the 1983 Group Annuity Mortality Table for both males and females.
- ◆ The rates for probability of retirement and the probabilities of withdrawal from active service, including death, before age and service retirements are presented in the Schedule of Active Member Valuation Data.
- ◆ The projected average salary increase is 6.8% with a range of 5.16% to 8.98%. This increase includes an underlying assumption of 3.0% for inflation. The annual rate of salary increase for promotions and longevity for members is presented in the Schedule of Active Member Valuation Data.
- ◆ The plan uses a variation of the entry age normal actuarial cost method to determine the liabilities and costs related to the System's benefits. The method is based on the benefits and contributions for new employees rather than for all current employees from their date of entry. This variation should produce approximately the same results as the typical method over the long run. The Fund uses an amortization period of 20 years for both unfunded liabilities and subsequent changes in the liability, including those arising from plan amendments and actuarial gains and losses.
- ◆ The plan does not use an assumption for cost of living adjustments in the determination of actuarial valuations.
- ◆ The plan periodically prepares a study using actual experience in order to develop assumptions to be used in its actuarial valuations. The latest study was completed March 20, 1996, for the period January 1, 1991, through December 31, 1995.
- ◆ Effective for the actuarial valuation for the plan year ended December 31, 1995, the Board approved changing the investment rate of return from 9.25% to 8.5% and changing the projected salary increases from 6.7% to a range of 5.16% to 8.98%. In addition, the Board approved the change from the 1971 Group Annuity Mortality Table (GAM 71) to the 1983 Group Annuity Mortality Table for current and future employees. GAM 71 continues to apply to current retirees. In 1998, the Legislature enacted a cost of living adjustment. This adjustment had the effect of increasing the actuarial accrued liabilities by approximately \$478 million.
- ◆ The valuation was based on members of the System as of December 31, 1997. All census data was supplied by the System and was subject to reasonable consistency checks. Asset data was also supplied by the System.
- ◆ The actuarial computations were prepared by, or made under the supervision, of a Member of the American Academy of Actuaries (M.A.A.A.).

Schedule of Active Member Valuation Data

Withdrawal From Active Employment Before Age and Service Retirement Annual Rate of Active Members Separating Within the Next Year As of December 31, 1997

Table A*												
Sample Age	Male						Female					
	Withdrawal Years of Service				Death		Withdrawal Years of Service				Death	
	0	1	5	> 9	Disability		0	1	5	> 9	Disability	
20	12.04%	8.40%	3.50%	0.48%	-	-	9.51%	5.07%	5.88%	0.98%	-	-
25	12.04	8.40	3.78	0.48	0.05%	0.03%	10.57	9.10	5.88	0.98	0.04%	0.05%
30	9.05	7.28	3.75	0.48	0.06	0.07	10.57	10.12	5.75	0.98	0.04	0.13
35	8.70	5.23	3.15	0.48	0.07	0.14	8.90	7.63	4.49	0.78	0.05	0.20
40	7.76	4.49	2.63	0.37	0.10	0.21	7.52	4.90	3.41	0.61	0.08	0.29
45	7.25	5.57	2.05	0.34	0.17	0.38	6.40	4.41	3.06	0.51	0.09	0.46
50	7.07	3.58	1.52	0.32	0.26	0.53	7.75	4.35	2.73	0.60	0.17	0.69
55	5.99	3.01	1.33	0.30	0.44	0.70	6.45	5.65	2.56	0.56	0.28	0.87
60	-	-	-	-	0.68	0.80	-	-	-	-	0.32	1.02

**Annual Rate of Retirement
Table B***

Sample Age	Full Benefits	
	Male	Female
50-58	13.0%	3.0%
59	13.0	13.0
60	17.0	26.0
61	19.0	21.0
62	51.0	43.0
63	26.0	28.0
64	26.0	28.0
65	51.0	50.0
66	34.0	35.0
67	26.0	33.0
68-79	24.0	24.0
80	100.0	100.0

Reduced Benefits

	Male	Female
30	1.0%	1.0%
35	1.0	1.0
40	1.0	1.0
45	1.0	1.0
50	1.1	1.0
55	1.6	1.0

**Annual Rate of Salary Increase
Table C**

Age	Increase
20	5.5%
25	5.5
30	5.3
35	4.6
40	4.0
45	3.5
50	2.8
55	2.1
60	1.8

* The assumptions presented in Table A and Table B on this page were based on a review of SERS's experience from 1991 through 1995. The rates are the probabilities that an event will occur in the year after the valuation. For instance, the male retirement rate of 17.0% at age 60 means that 170 of every 1,000 male employees age 60 and eligible for full benefits are expected to retire before they reach age 61.

Actuary Trend Data*

	1998	1997	1996	1995	1994	1993	1992
Employer Contribution Rate	N/A	6.70%	7.28%	7.69%	10.27%	8.92%	8.92%
Member Contribution Rate	N/A	5.00%	5.00%	5.00%	5.00%	5.00%	6.25%
Employer Contributions	\$ 310,501	324,093	373,902	384,506	342,927	304,122	319,093
Member Contributions	\$ 221,618	212,556	209,581	201,719	193,204	190,360	187,167
Average Annual Compensation	\$ 38,898	36,926	35,839	34,268	32,960	31,674	30,645
Market Value of Assets	\$24,123,358	21,311,771	18,492,216	16,342,809	13,330,276	13,700,887	12,453,359
Actuarial Value of Assets	N/A	\$18,565,136	16,841,069	15,510,309	13,991,485	13,060,613	11,769,388
Accrued Actuarial Liability	N/A	\$17,288,413	15,936,617	15,067,205	13,742,056	12,213,736	11,488,414
Funded Ratio	N/A	107.4%	105.7%	102.9%	101.8%	106.9%	102.4%
Total Benefits and Refunds	\$ 1,062,155	1,021,721	928,344	879,712	796,371	768,797	839,252
Average Pension	\$ 12,027	10,555	10,150	9,801	9,456	8,731	8,473
Annuityants and Beneficiaries	85,834	85,457	83,086	81,204	80,835	80,690	80,492
Active Participants	108,893	108,684	110,922	112,637	114,120	111,962	109,609

* All dollar amounts are in thousands, except Average Pension and Average Annual Compensation.

N/A - Value not available pending release of the 1998 Actuarial Valuation Report.

Active Members by Age and Years of Service

Age Group	Years of Service							Total	Average Salary
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 Plus		
Male									
< 20	10	-	-	-	-	-	-	10	\$ 20,000
20 - 24	540	5	-	-	-	-	-	545	22,801
25 - 29	3,193	950	15	-	-	-	-	4,158	30,511
30 - 34	2,707	2,976	752	31	-	-	-	6,466	34,602
35 - 39	1,925	2,262	2,302	1,189	41	-	-	7,719	36,129
40 - 44	1,817	1,931	2,076	2,261	1,284	108	-	9,477	37,797
45 - 49	1,709	1,785	1,766	2,019	2,741	2,111	64	12,195	40,676
50 - 54	1,315	1,349	1,341	1,216	1,863	3,221	861	11,166	43,900
55 - 59	787	830	859	723	832	1,501	1,302	6,834	45,413
60 - 64	398	498	513	397	373	544	682	3,405	46,490
> 65	181	240	202	155	143	146	279	1,346	50,588
Total	14,582	12,826	9,826	7,991	7,277	7,631	3,188	63,321	\$ 39,849
Average Age:		45.2							
Average Service:		13.3							

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 Plus	Total	Average Salary
Female									
< 20	38	-	-	-	-	-	-	38	\$ 20,059
20 - 24	640	48	-	-	-	-	-	688	21,565
25 - 29	1,674	866	80	-	-	-	-	2,620	25,338
30 - 34	1,381	1,472	852	78	-	-	-	3,783	28,158
35 - 39	1,421	1,503	1,342	1,328	118	-	-	5,712	30,962
40 - 44	1,444	1,654	1,390	1,670	1,752	355	-	8,265	33,107
45 - 49	1,126	1,480	1,316	1,414	1,772	2,123	120	9,351	34,891
50 - 54	815	1,096	1,104	1,092	1,142	1,334	546	7,129	35,133
55 - 59	443	693	745	857	889	751	437	4,815	35,210
60 - 64	181	351	392	385	378	315	232	2,234	35,680
> 65	74	129	128	113	82	100	102	728	34,372
Total	9,237	9,292	7,349	6,937	6,133	4,978	1,437	45,363	\$ 32,846
Average Age:		44.9							
Average Service:		13.3							

Active Member Valuation Data

Valuation Date	Number of Employers	Number of		Annual Payroll	Annual Average Pay	% Increase in Average Pay
		Active Members				
31-Dec-97	107	108,684		\$4,219,000,000	\$36,926	3.0%
31-Dec-96	108	110,922		3,996,000,000	35,839	4.6
31-Dec-95	109	112,637		3,861,000,000	34,268	4.0
31-Dec-94	110	114,120		3,714,000,000	32,960	4.1
31-Dec-93	115	111,962		3,488,000,000	31,674	3.4
31-Dec-92	110	109,609		3,284,000,000	30,645	3.9

Schedule of Retirants and Beneficiaries Added to and Removed From Rolls

Years Ended December 31, 1998 through 1995

Year	Number on Rolls			Percentage Change in Annuitants	Annual Annuities	Percentage Change in Annuities
	Additions	Deletions	End of Year			
1998	4,084	3,707	85,834	0.44%	\$892,981,308	11.38%
1997	5,622	3,251	85,457	2.85	801,778,597	7.01
1996	4,893	3,011	83,086	2.32	749,274,115	6.50
1995	3,783	3,482	81,204	0.37	703,568,068	5.03

Solvency Test

Valuation Date	Aggregate Accrued Liabilities For			Total Actuarial Accrued Liability (AAL)	Actuarial Valuation of Assets	Portion of Accrued Liabilities Covered by Reported Assets			Funded Ratio
	(1)	(2)	(3)			(1)	(2)	(3)	
	Active Member Contributions	Retirants & Beneficiaries	Active Members (Employer Financed Portion)*						
	(Amounts in Thousands)								
31-Dec-97	\$ 2,748,177	\$ 6,951,411	\$ 7,588,825	\$ 7,288,413	\$18,565,136	100.0%	100.0%	100.0%	107.4%
31-Dec-96	2,646,630	6,027,333	7,262,653	15,936,616	16,841,069	100.0	100.0	100.0	105.7
31-Dec-95	2,499,485	5,649,454	6,918,266	15,067,205	15,510,309	100.0	100.0	100.0	102.9
31-Dec-94	2,352,731	5,039,221	6,350,104	13,742,056	13,991,485	100.0	100.0	100.0	101.8
31-Dec-93	2,170,593	4,806,907	5,236,236	12,213,736	13,060,613	100.0	100.0	100.0	106.9
31-Dec-92	1,994,567	4,621,318	4,872,529	11,488,414	11,769,388	100.0	100.0	100.0	102.4

Analysis of Financial Experience

Gains and Losses in Accrued Liabilities Resulting from Differences Between Assumed Experience and Actual Experience

Type of Activity	1997	1996	1995
Gain(Loss) from Investment Earnings	\$ 814,468	\$ 396,986	\$ 414,602
Demographic Assumptions	23,754	190,630	(210,007)
Pay Increases	83,253	(196,568)	303,957
Contribution Income	-	23,676	-
Change in Salary Scale	-	-	420,013
Other	(22,670)	41,010	(144,256)
Gain(Loss) During Year From Financial Experience	898,805	455,734	784,309
Non Recurring Items:			
Inclusion of Step Rate			
Bonuses in Retirement Pay	(58,597)	-	-
Supplemental Annuities	(478,000)	-	-
Provision for 30 and Out Funding	-	-	(353,695)
Change in Investment Return Assumption	-	-	(243,166)
Composite Gain(Loss)	\$ 362,208	\$ 455,734	\$ 187,448

Summary of Plan Provisions

Benefit and Contribution Provisions as of December 31, 1998 (as embodied in Act 31, approved March 1, 1974)

The State Employees' Retirement System makes provision for retirement, disability, and death benefits for all State employees and certain other eligible groups. The major provisions may be summarized as follows:

Eligible Employees

- Class A - All regular State employees as well as employees of certain Commissions and Authorities and all employees of state-owned educational institutions and the State University (unless such employees have joined the Public School Employees' Retirement System or TIAA-CREF). All employees who become members (or who rejoin the Retirement System) on and after March 1, 1974, except Judges and District Justices.
- Class C - Liquor Law enforcement officers and other officers and certain employees of the State Police who have been members and employees continuously since prior to March 1, 1974.
- Class D-3 - Members of the General Assembly who have been members and employees continuously since prior to March 1, 1974.
- Class E-1 - Judges.
- Class E-2 - District Justices.

Age and Service Requirements for Superannuation (full formula benefits)

- Class A - Age 60, with three years of service, except for members of the General Assembly, enforcement officers, correction officers, psychiatric security aides, and officers of the Delaware River Port Authority; for whom the requirement is age 50 with three years of service. Members of Class A with 35 or more years of credited service are entitled to full formula benefits regardless of age. State Police Officers can retire on full benefits after age 50 or with 20 years of service. Capitol Police and Park Rangers can retire on full benefits at age 50 with 20 years of Capitol Police or Park Ranger service.
- Classes C - Age 50, with three years of service.
- Class D-3 - Age 50, with three years of service.
- Class E-1 - Age 60, with three years of service; or 35 or more years of credited service, regardless of age.
- Class E-2 - Age 60, with three years of service; or 35 or more years of credited service, regardless of age.

(Continued)

Formula for Superannuation Annuity

The standard single-life annuity applicable to members of Class A and Class C is equal to 2% of the high three-year average salary ("F.A.S.") of the member multiplied by the years and fractions of credited service.

The applicable single-life annuity for Class C State Police and Class A State Police is a minimum of 50% of highest annual salary if the member has over 20 but less than 25 years of service. With more than 25 years of service the benefit is a minimum of 75% of highest annual salary.

The annuity paid to a member shall not exceed the member's highest salary during any period of 12 consecutive months of creditable service.

The annuity for other classes of members is obtained by multiplying the standard single-life annuity by a class multiplier as follows:

<u>Class</u>	<u>Multiplier</u>	
D-3	3.75	
E-1	2.0	for each of the first 10 years of judicial service dropping to 1.5 for each subsequent year of judicial service.
E-2	1.5	for each year of judicial service.

NOTE: There are conditions under which long-service members or members retiring at advanced ages may receive somewhat larger benefits than those described above. Further, benefit limitations exist for most members of Class D-3.

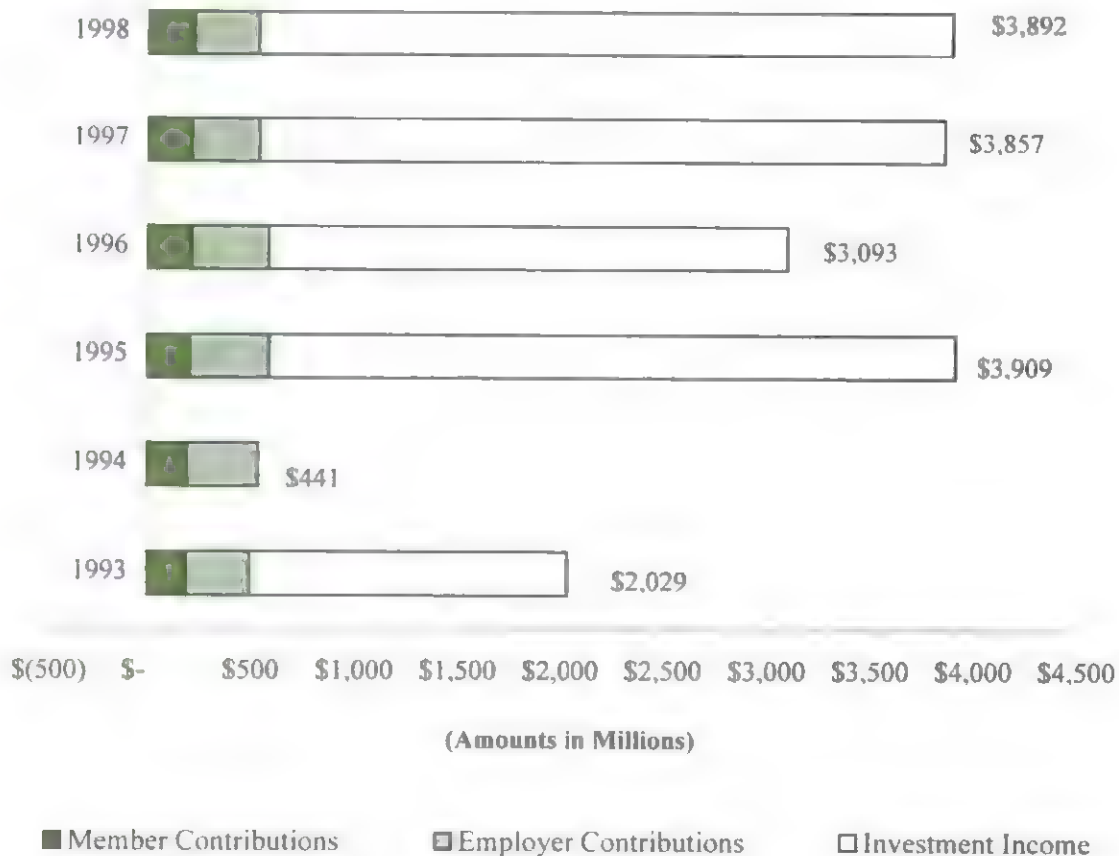
STATISTICAL SECTION

Schedule of Additions to Plan Net Assets

Years Ended December 31, 1998 through 1993
(Dollar Amounts in Thousands)

Year Ending	Member Contributions	Employer Contributions		Net Investment Income	Total
		Dollars	% of Annual Covered Payroll		
1998	\$ 221,618	\$ 310,501	7.0%	\$ 3,359,844	\$ 3,891,963
1997	212,556	324,093	7.7%	3,320,169	3,856,818
1996	209,581	373,902	9.4%	2,509,330	3,092,813
1995	201,719	384,506	10.0%	3,322,362	3,908,587
1994	193,204	342,927	9.2%	(94,805)	441,326
1993	190,360	304,122	8.7%	1,534,370	2,028,852

Additions to Plan Net Assets

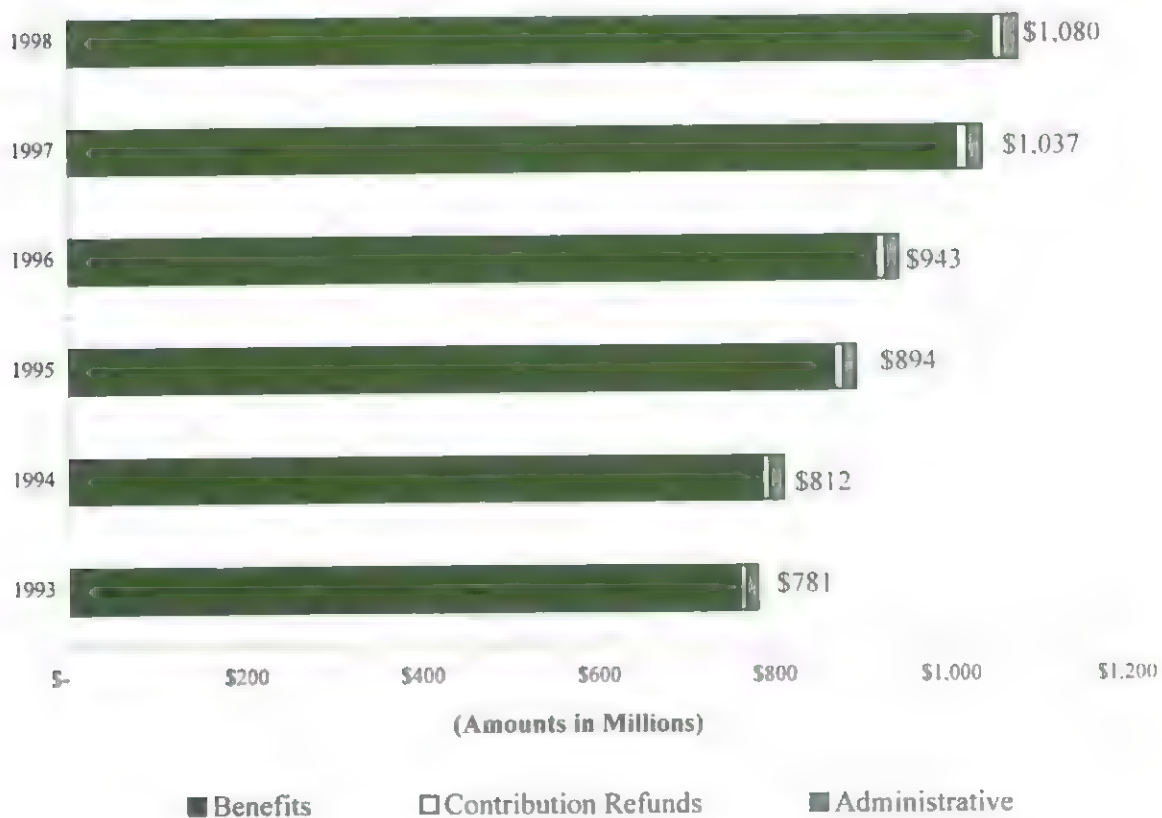


Schedule of Deductions from Plan Net Assets

Years Ended December 31, 1998 through 1993
(Amounts in Thousands)

Year	Benefits	Refund of Contributions	Administrative	Total
1998	\$1,050,870	\$11,285	\$18,221	\$1,080,376
1997	1,008,648	13,073	15,542	1,037,263
1996	918,218	10,126	15,062	943,406
1995	869,905	9,807	14,431	894,143
1994	788,330	8,041	15,566	811,937
1993	761,993	6,804	12,527	781,324

Deductions from Plan Net Assets

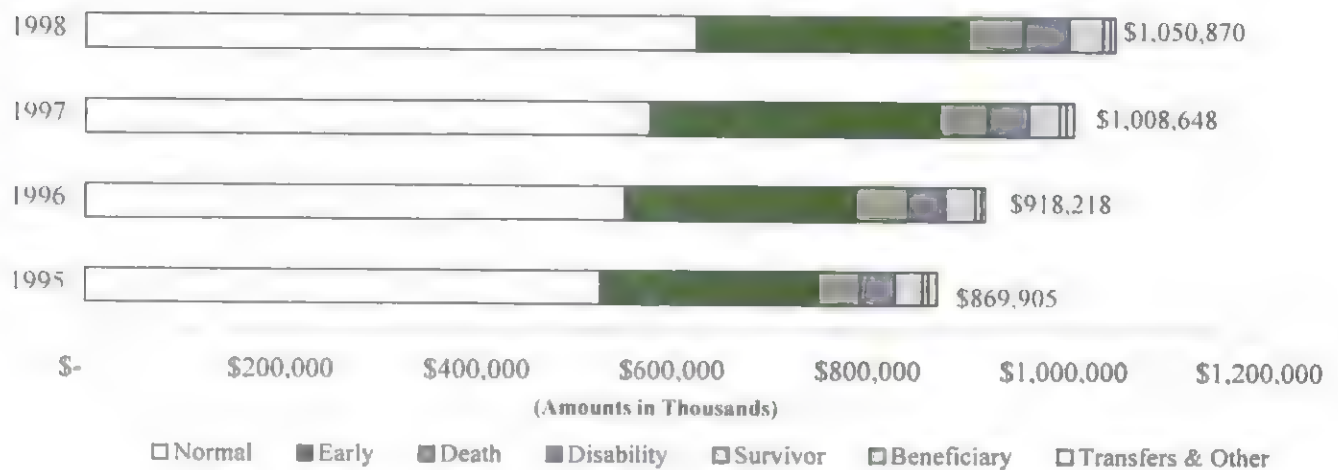


Schedule of Benefit Expenses by Type

Years Ended December 31, 1998 through 1995
(Amounts in Thousands)

Year	Retirement		Death	Disability	Survivor	Beneficiary	Transfers & Other	Total
	Normal	Early						
1998	\$623,980	\$276,428	\$57,465	\$45,691	\$34,681	\$7,527	\$5,098	\$1,050,870
1997	576,573	294,827	50,287	40,898	32,063	6,871	7,129	1,008,648
1996	550,547	236,038	53,705	37,735	30,415	6,892	2,886	918,218
1995	525,653	222,755	43,364	35,555	27,820	6,239	8,519	869,905

Benefits by Type



Schedule of Retired Members by Type of Benefit

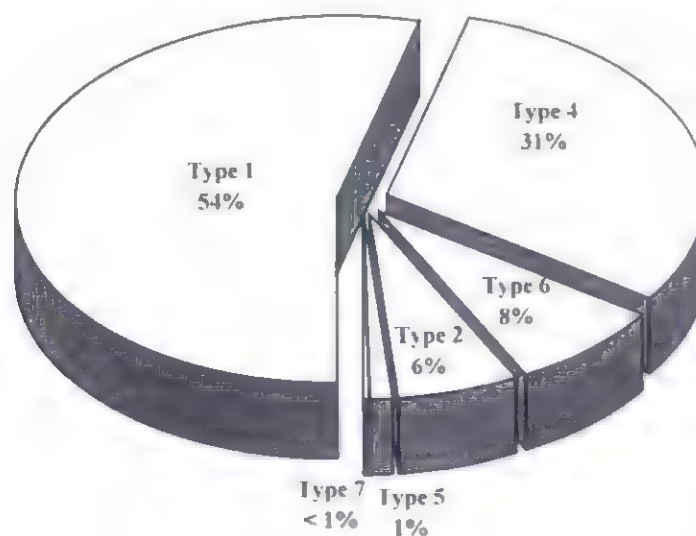
As of December 31, 1998

Amount of Monthly Benefit	Total Monthly Benefits	Total Number of Retirees	Type of Retirement					
			1	2	4	5	6	7
\$1 to 500	\$ 9,342,625	36,497	15,233	1,401	14,380	636	4,776	71
501 to 1,000	17,404,957	24,279	15,326	2,987	4,359	256	1,316	35
1,000 to 1,500	13,690,037	11,237	6,902	737	3,146	77	354	21
1,500 to 2,000	9,781,543	5,679	3,611	158	1,774	21	107	8
2,000 to 2,500	6,334,401	2,853	1,865	25	888	10	63	2
2,500 to 3,000	5,384,268	1,960	1,203	9	723	7	18	-
Over 3,000	12,477,278	3,329	2,245	5	1,040	12	26	1
Totals	\$74,415,109	85,834	46,385	5,322	26,310	1,019	6,660	138

Type of Retirement

- 1 - Superannuation
- 2 - Disabled
- 4 - Early
- 5 - Beneficiary
- 6 - Survivor
- 7 - Alternate Payee

Retired Members by Type



Schedule of Retired Members by Option

As of December 31, 1998

Amount of Monthly Benefit	Total Monthly Benefits	Total Number of Retirees	Option Selected					
			FRA	1	2	3	4	Other
\$1 to 500	\$ 9,342,625	36,497	10,669	13,740	7,788	3,298	328	674
501 to 1,000	17,404,957	24,279	7,966	8,762	3,913	2,570	782	286
1,000 to 1,500	13,690,037	11,237	3,104	3,985	1,798	1,553	700	97
1,500 to 2,000	9,781,543	5,679	1,445	1,792	820	938	655	29
2,000 to 2,500	6,334,401	2,853	706	766	431	464	474	12
2,500 to 3,000	5,384,268	1,960	510	572	308	315	244	11
Over 3,000	12,477,278	3,329	1,256	854	327	485	391	16
Totals	\$74,415,109	85,834	25,656	30,471	15,385	9,623	3,574	1,125

Options

FRA - Full Retirement Allowance

Opt. 1 - Annuity for Life with beneficiary receiving remainder of Present Value when member dies.

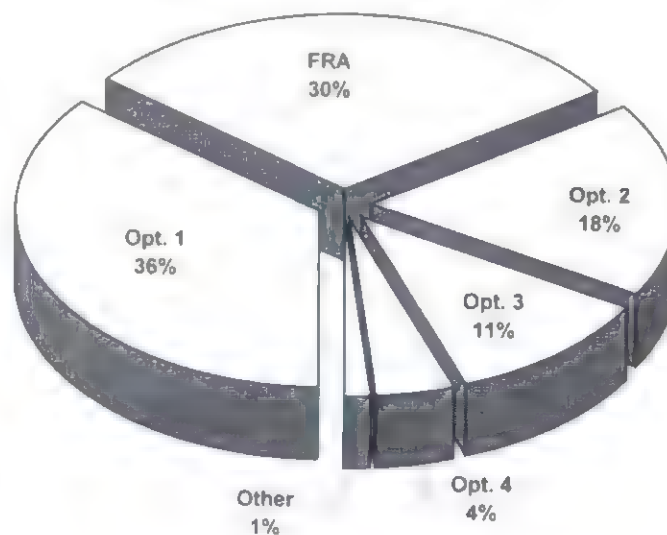
Opt. 2 - Annuity for Life with beneficiary receiving same annuity when member dies.

Opt. 3 - Annuity for Life with beneficiary receiving one half the member's annuity amount when member dies.

Opt. 4 - Member designs a different plan approved by SERS not covered under the above option.

Other - Death Benefit and Domestic Relation Order

Retired Members by Option



Schedule of Average Annual Benefit Payment Amounts

As of December 31, 1998

Age	Superannuation		Early Retirement		Disability		Beneficiary and Survivor	
	Male	Female	Male	Female	Male	Female	Male	Female
Under 25	-	-	-	-	-	-	\$ 1,475	\$ 9,361
25-29	-	-	-	-	-	-	12,891	19,877
30-34	-	-	\$ 1,011	\$ 1,034	\$ 7,708	\$ 8,526	3,303	5,255
35-39	-	-	1,605	1,533	9,015	8,494	5,569	15,343
40-44	-	-	2,116	1,952	9,250	9,086	5,358	6,940
45-49	-	-	4,479	2,694	10,428	9,623	2,448	5,864
50-54	\$ 31,177	\$ 14,229	14,467	6,006	10,332	9,968	3,639	6,819
55-59	31,704	19,955	15,415	9,374	10,705	9,142	4,349	8,652
60-64	22,143	13,570	15,110	8,356	9,298	8,492	4,917	7,214
65-69	17,019	10,952	12,717	6,936	8,738	6,970	5,213	7,831
70-74	14,426	9,370	10,980	6,309	7,824	6,196	7,073	6,128
75-79	11,528	7,597	9,499	7,257	6,608	5,258	4,979	5,086
80-84	8,983	6,508	8,954	7,555	6,622	5,216	4,034	4,257
85-89	8,873	6,812	7,682	6,343	4,580	4,392	3,996	4,167
90 over	8,254	6,854	5,250	4,597	3,595	3,900	3,722	4,133
Total	\$ 14,614	\$ 8,803	\$ 12,438	\$ 6,408	\$ 9,347	\$ 8,183	\$ 5,042	\$ 5,460
Total Average Pension	Superannuation		Early Retirement		Disability		Beneficiary and Survivor	
	\$ 12,027		\$ 9,567		\$ 8,754		\$ 5,429	
Total Average Age Male & Female	74.3		58.4		59.3		75.5	

Schedule of Participating Employers

As of December 31, 1998

Administrative Office-PA Courts	Department of Transportation
Bloomsburg University Community Activities	Department of Military and Veterans Affairs
Board of Probation and Parole	East Stroudsburg University Student Association
Bucks County Community College	Edinboro University Services, Inc.
Bucks County Health Department	Edinboro University Student Government
Bucks County Intermediate Unit	Environmental Hearing Board
California University Student Association	Erie County Health Department
Capitol Preservation Committee	Executive Offices
Center for Rural Pennsylvania	Fish and Boat Commission
Central Susquehanna Intermediate Unit	Game Commission
Chester County Health Department	Governor's Office
Civil Service Commission	Harrisburg Area Community College
Clarion University Student Association	Historical and Museum Commission
Community College of Allegheny County	House Appropriations Committee(D)
Community College of Philadelphia	House Appropriations Committee(R)
Delaware County Community College	House of Representatives
Delaware River Joint Toll Bridge	Independent Regulatory Review Commission
Delaware River Port Authority	Indiana University Student Co-op
Delaware Valley Regional Planning Commission	Insurance Department
Department of Aging	Joint Legislative Conservation Committee
Department of Agriculture	Joint State Government Commission
Department of Banking	Kutztown University Student Services
Department of Community & Economic Development	Lancaster-Lebanon Intermediate Unit
Department of Conservation & Natural Resources	Legislative Budget & Finance Committee
Department of Corrections	Legislative Data Processing Center
Department of Education	Legislative Reference Bureau
Department of Environmental Protection	Lehigh Carbon Community College
Department of General Services	Lieutenant Governor's Office
Department of Health	Liquor Control Board
Department of Labor and Industry	Local Government Commission
Department of Public Welfare	Lock Haven University Student Co-op
Department of Revenue	Luzerne County Community College
Department of State	Luzerne Intermediate Unit
Department of the Auditor General	Mansfield University Community Services

(Continued)

Schedule of Participating Employers (continued)
As of December 31, 1998

Milk Marketing Board	Public Utility Commission
Millersville Student Services	Reading Area Community College
Montgomery County Community College	Riverview Intermediate Unit
Northampton Community College	Securities Commission
Office of Attorney General	Senate of Pennsylvania
Office of Liquidations	Shippensburg Student Association
Pennsylvania College of Technology	Slippery Rock Student Government
Pennsylvania Convention Center Authority	State Employees' Retirement System
Pennsylvania Health Care Cost Containment Council	State Ethics Commission
Pennsylvania Housing Finance Agency	State Public School Building Authority
Pennsylvania Emergency Management Agency	State System of Higher Education
Pennsylvania Higher Education Assistant Agency	State Tax Equalization Board
Pennsylvania Infrastructure Investment Authority	Susquehanna River Basin Commission
Pennsylvania Municipal Retirement System	Treasury Department
Pennsylvania Port Authority	Turnpike Commission
Pennsylvania Public Television Network Commission	U.S. Property & Fiscal Office for Pennsylvania
Pennsylvania State Police	West Chester University Student Services
Pennsylvania State University	Westmoreland County Community College
Port Authority Transit Corporation	171st Air Refuel Wing
Public School Employees' Retirement System	

Deferred Compensation Program

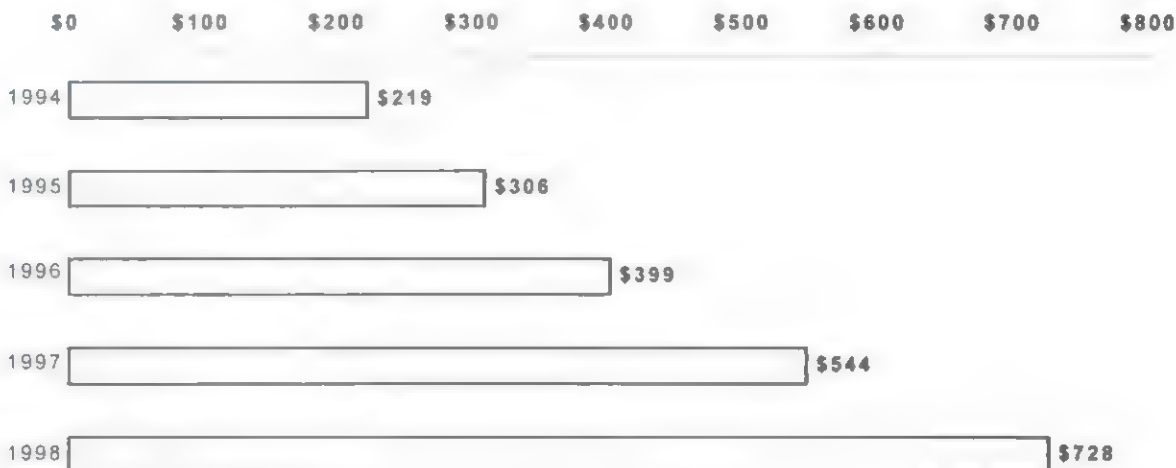
Implementation

Act 1987-81 assigned to the SERS Board of Trustees the responsibility to establish and monitor an Internal Revenue Code Section 457 Deferred Compensation Program for Commonwealth officers and employees through which members may voluntarily build retirement savings by deferring a portion of salary to selected investment options. Through the Request for Proposal process, SERS selected The Copeland Companies as Third Party Administrator of the Deferred Compensation Program.

Growth of the Program

Over the past five years, the program's assets have more than tripled in value from approximately \$219 million to over \$728 million. As of December 31, 1998, there were 33,300 active participants in the Deferred Compensation Program. Members' deferred compensation in calendar year 1998 was \$89 million, and overall program assets grew by \$184 million.

Deferred Compensation Program Asset Growth 1994-1998
(Amounts in Millions)



1998 Highlights

As the result of a new Request for Proposal process initiated in 1997, the contract for the Deferred Compensation Program Third Party Administrator was renewed with The Copeland Companies in 1998. The new four-year contract, with a final year renewable option, became effective August 1, 1998. As required by the federal Small Business Job Protection Act of 1996, Pennsylvania Act 1998-162 was signed into law on December 21, 1998, amending the Pennsylvania Deferred Compensation Law to comply with the following provisions of federal law:

- Program assets are required to be held in trusts;
- Programs may allow for a one-time change to the benefit commencement date;
- Programs may allow for a cash-out provision of \$5,000 or less; and
- Indexation of maximum deferred benefits.

In November 1998, the Deferred Compensation Program also changed the method of valuation from monthly to daily valuation, allowing participants to make more timely transfers of assets.

NOTES

NOTES



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